Issue 22 • Apr 8 1989

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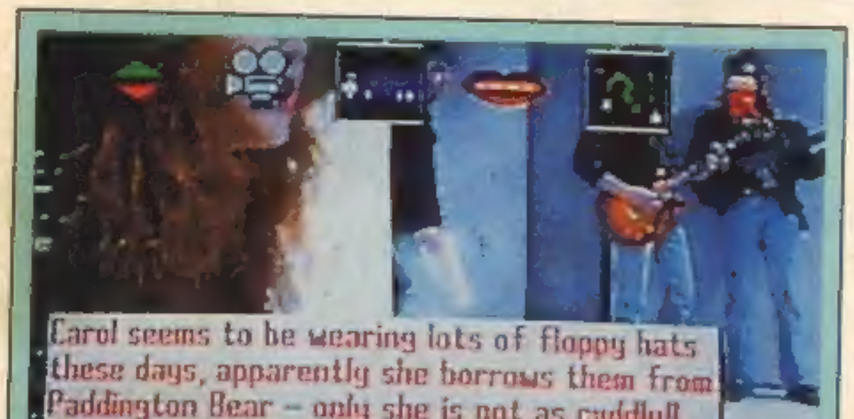
Turning Japanese : The story of the MSX – page 18

NEW COMPUTER EXPRESS

First news, first reviews – every week

TURN UP THE BASS

How this man might revolutionise computer music page 2



Carol seems to be wearing lots of floppy hats these days, apparently she borrows them from Paddington Bear – only she is not as cuddly!!

page 28 ...have just returned from a three month ...bean tour and "Only The Lonely" is the ...first track from their "Race" album.

ENTER THE VIRUS BUSTERS

How they can help you – page 2

Customise your videos!

The best packages to make your home movie into a professional video

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Drive a hard bargain

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IT'S DIVINE!

The game that allows YOU to run the world

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VIRUS BUSTERS TAKE UP ARMS

For business and home computer users worried about viruses – malicious programs which spread via disk from computer to computer, erasing data on the way – help is at hand.

Users such as British Telecom, Novell and British Rail have formed the Computer Threat Research Association (COTRA) with the aim of exposing exactly how dangerous the much reported virus epidemic is.

The group will be researching and investigating the problem with a view to protecting Britain's users from viruses and from the hype surrounding them. Anyone will be able to join COTRA from individual users to large corporations.

Whilst many are worried about the possible effects of virus infection a growing number of users suspect the affair has been bloated out of all proportion by sensationalist national newspapers and irresponsible computer magazines.

"There are a lot of people worried about the virus problem but nobody has actually sat down to look at the facts," said COTRA chairman Mark Gibbs. He added: "There is a degree of scaremongering and misconceptions about it and a definite lack of information. We want to look closely at the issues."

COTRA will be publishing a series of reports including papers on individual viruses and machines. It hopes to cover PCs, the Amiga, ST, Mac and Apricot amongst others.

The body is hoping to attract members from the business community as well as educational establishments and interested users. Whilst it is a non profit making organisation charges are likely to be about £80 a year. The group is meeting later this month to pinpoint aims and arrange relevant committees.

"We want to educate people on this issue," said Gibbs (also a senior manager at American networks firm Novell). "People should be confident of the integrity of their computers and systems through effective management and technology."

COTRA will be offering PD virus busting packages and perhaps selling on mainstream products.

Prominent virus buster Dr Alan Solomon of S&S Enterprises welcomed the move and has joined up. He claimed that the problem "is very real" and not just hyped up nonsense.

COTRA can be contacted on 0836 865944.

Help battle the virus menace

One firm has decided to stand firm on the corporate virus issue and is calling on members of the business community and general public to send in any viruses they come across.

Big name management consultancy Price Waterhouse has already published a handbook highlighting 20 of the main viruses currently floating around the country. However, many believe that the number of unknown viruses in circulation could run into the hundreds.

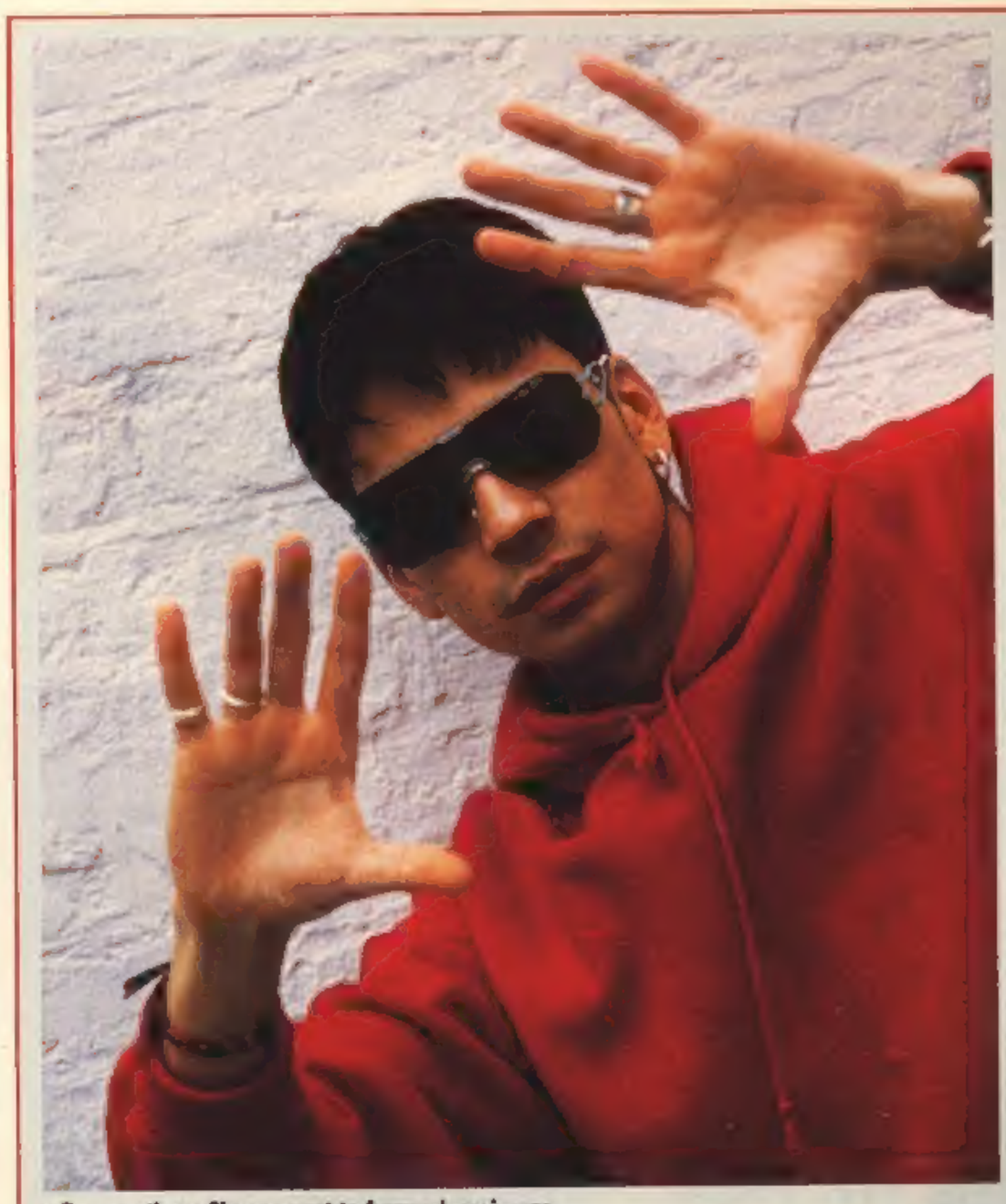
Price Waterhouse wants sufferers to join in by sending off any viruses which are isolated. The firm warns that the viruses should be clearly labelled though – it would rather not let any loose into its networks. Send yours into *Express* at the usual address.

Protect and survive?

When it comes to viruses the world of computing is split between users quaking in their boots and cynics who suspect it's all a ludicrous scam.

Presumably CRL is pitching the former with its exceptionally low cost virus busting package. The Virus Killer costs £10 and is available on the Amiga (ST and PC versions are planned). It can run alongside normal programs, knows a thing or two about current viruses and can learn new ones.

More on 01 533 2918.



• **Bass motives: Simenon set to form mirror image**

Beat Dis(k)

Cut up king Bomb the Bass – one of House music's leading exponents of sampled sound – is to be featured in future Mirrorsoft games.

The software house will be using Bomb the Bass music in future projects the first of which will be Xenon 2. That game will run the song MegaBlast although it won't be sampled straight onto disk.

Bomb the Bass's Tim Simenon uses Atari STs to sample and mix sounds at the famous MUTE studio programming suite. Bomb the Bass's first album, In 2 The Dragon, went silver in its first week. The first single Beat Dis attained the highest chart entry for an unknown entity. Mirrorsoft is confident it can come up with the best sound on a game yet.

Cyber with Rosie

Who said computer owners were not literate? Book lovers can now find out about their favourite novels and authors from their machines.

A new database called Rosie has been launched containing cross references to 435 novels and can be pulled up along multifarious themes such as love, sport, war, dreams, pregnancy and soon. It also contains a listing of various questions related to the books.

Reading for Open Study in English has been received well by the educational authorities but can also be obtained by literature addicts. It's available for the Beeb as well as the PC and costs £65.

Books contained include Orwell's *1984*, Greene's *The Third Man*, Wilde's *The Importance of Being Earnest*, Golding's *Lord of the Flies* as well as Shakespeare, World war 2 novels and a selection of poems. More on 0734 699948.

Who ya gonna call?

The best selling game of all time is to get a sequel – *Ghostbusters 2* should be here in the autumn.

The original *Ghostbusters* was bought by more than two million people. Activision is hoping to repeat that success. The game will be available simultaneously with the new film.

Activision will also be unveiling a line up of coin-op licenses including *Galaxy Force*, *Altered Beast* and current arcade favourite *Power Drift*. Activision reckons this little lot is "the cream of Sega coin-ops". Other film tie ups will include *The Abyss* and *Bruce Willis's Die Hard*.

• Blast from the past: Now, Ghostbusters II

Amstrad in Lotus position

As first predicted in *Express* (Issue 9), Amstrad is to offer its PC 2086 with Lotus's integrated suite of business software *Symphony*.

• Blossoming Lotus: New deal from Amstrad

Buyers will also be able to pick the machine up with a choice of Amstrad printers. The entry level of this lot will be £999. Whilst this is £500 more than prices without printer and software, it represents a notional £500 saving.

Symphony comes with spreadsheet, word processing, database, graphics and comms packages. It has already been superseded by version 2, which costs £500.

The offer is impressive mainly because of the proven worth of *Symphony*. Since its launch it has consistently been one of the best-selling business packages in the UK outstripping other integrated suites.

Of the printers, a choice is being put forward between the Amstrad LQ3500 and the more expensive LQ5000. Anyone who chooses the latter will pay more.

"For the last couple of months we have been planning a campaign to increase our dominant share of the 8086 sector even further," said Amstrad's Malcolm Miller. "We're offering the end user a superb deal."

Amstrad has already conjured up a similar deal for its low end PC1512 which comes with printer and software for less than £500.

As the PC area continues to be furiously competitive, buyers can expect to be offered an ever increasing line up of special deals from which to choose.

Psion wave

Psion Organisers are becoming increasingly popular. Handheld buyers picked up 147,000 machines last year. That compares with 88,000 in 1987. For its efforts Psion has picked up a tidy profit of £2.76 million.

• Psion of the times: Organisers are getting more popular

Tails they lose

For those of you sick of getting your mouse lead tangled around ash trays, empty coffee cups and other important desktop accessories, comes the mouse with no tail.

Eclipse is soon to start importing the £75 leadless mice from Hong Kong. The BMC Cordless Mouse relies on infra red transmission of data and is fully compatible with PC mouse standards.

It can be connected to your PC with an RS 232 interface and comes with mouse

• Taking the lead: The BMC cordless mouse

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NEW COMPUTER EXPRESS

MULTIPLE FURY

Shops' anger at bad taste title

***Rock Star Ate My Hamster* – Code Masters' new pop star management game – has been pulled from shop shelves after complaints of bad taste.**

W H Smiths, Boots and John Menzies have all sent batches of the title back and will not stock it until the instruction booklet is removed. The booklet comes in the form of a spoof newspaper called *The Stun* that includes a series of jokes which are described as being "in very poor taste".

"There are references to glue sniffing and screwing, that's not exactly the sort of thing we want to be selling to the kids," fumed W H Smiths' computer buyer Sean Willis to *Express*. "We've withdrawn it from sale. You take these things in good faith because we can't be expected to read every instruction manual. I don't know who's responsible but it's in extremely bad taste."

The game is clearly aimed at younger gamesters but the booklet includes pages of toilet humour and references to sex, unsavoury personal habits and extreme violence.

Once the game returns to the multiples shelves it will contain a normal instruction leaflet. Code Masters is unrepentant though. It is promising buyers a free copy of *The Stun* if they send in the replacement instruction leaflet.

"We feel its a little unfair because humour is a matter of personal taste," said a Code Masters spokesman. "This is the first truly humorous computer game and so we're breaking new ground."

• Prodigal Stun: Shops say it's in bad taste

Clothes show up on computers

Fashion and computers may not be the easiest of bedfellows – but a new package has been launched to bring the two together.

The package allows designers to draw their creations straight onto a graphics tablet. The software can then fit the garment onto a human form allowing the designer to make the necessary changes. Colours can then be pulled onto the screen. In the past this little lot could only be done on a mini computer (which aren't generally to be found in fashion studios).

The Ormus was developed by Stevenage based Concept II. Budding designers should note that Ormus weighs in at £7,000.

Drawn to CAD

Anyone keen to dabble in precise graphics and design on their PC may be tempted to pick Cherry's new offering.

A low cost A3-sized digitiser is being launched by the firm, which can handle accuracies to within 0.2mm with the curser puck and a resolution of up to 0.025mm.

The Mark VI costs £450 and comes with fine crosswires for pin point co-ordination. Computer Aided Design (CAD) has never been a cheap business but £450 is more within the grasp of the small business or home user.

Wielding Power

BALANCE OF POWER
THE 1990 EDITION

Highbrow American newspaper *The New York Times* has reviewed its first computer game.

The quality daily picked on Mindscape's political strategy thriller *Balance of Power* – and liked it. Said the *NYT*: "By the time you've mastered *Balance of Power* you'll be ready to apply for the job of national security adviser". Not surprisingly, the Mindscape crew are jumping for joy at this not unwelcome coverage.

• The New York Times goes BOPping

Aid to the COTRAs

The great worry for any car owner who depends on their vehicle for work is that it'll break down at the most crucial moment. Fortunately the AA or RAC provides help, and most importantly peace of mind, for thirty quid a year upwards. You don't need to know anything about what goes on under the bonnet, they'll take care of that; when your car goes wrong, you call them, and they do the rest.

Computers don't go wrong as often, but they can be sabotaged through viruses. Data loss through viruses is still far less frequent that data loss through plain hardware failure, but the effects can be more catastrophic – and the threat is therefore much more worrying. The news that an anti-virus organisation, COTRA, is being set up will be welcome indeed to many business and home computer users, particularly given the virus scaremongering that goes in the media.

If COTRA is to succeed it must offer an efficient and cheap AA/RAC-like service that *everyone* – even the least computer literate users – can benefit from: advice, technical assistance, and most importantly peace of mind. Newsletters can provide advice for all formats of machine and warn of the latest viruses – but they must be written for the average user, not the technical expert; public domain and professionally written virus-busting packages can be supplied with data rescue routines provided for 'roadside assistance' – but they must be easy to use, rigorously tested against current viruses.

The reassurance thereby provided that viruses are both preventable and curable would go a long way to beating not only the virus writers, but the biggest threat to your sanity: worry.

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Share and share alike (sort of)

International rules banning technically superior PCs from being sold to Eastern bloc countries could be loosened.

The US Commerce Department is talking to its allies with a view to allowing the Soviet Union, China and all their Communist pals to buy ATs from the West. At present, Eastern bloc countries can only import slower XTs.

Its not that the Capitalist West has any great desire to share its technology with the East. The US wants to win a share of potentially huge markets such as China. That country is expected to spend up to $10 billion dollars on high end technology over the next five years.

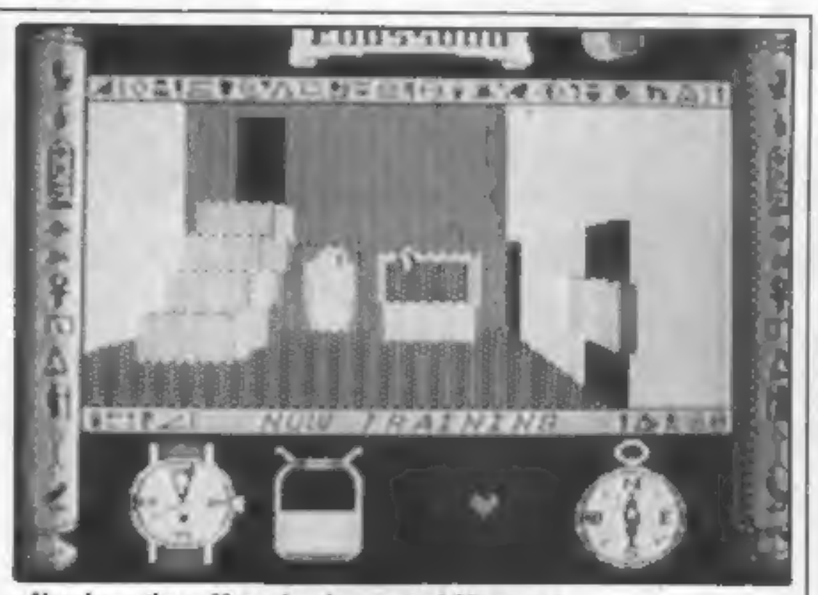
Passing the bucks

Ground breaking games software house Incentive is to spend more time developing its *Freescape* 3D games following a deal with US giant MicroProse.

The small software publisher is handing over all the boring details of selling its games over to MicroProse while it gets on with developing new games. Titles such as *Dark Side* and *Driller* have been welcomed for their innovation. Incentive wants to push through more such games incorporating new styles of gameplay.

Simultaneously, Microprose wants to move on from its traditional standing as a military simulation style company into mainstream gaming. First attempts at this include titles such as *Microprose Soccer* and *Xenophobe*. New labels are likely to appear within the next few weeks.

Incentive's new game *Total Eclipse* should arrive on 16-bit formats next month under the Microprose wing.



• New incentives: More development of 3D games

"They're much better at marketing games than us," explained Incentive boss Ian Andrew. "We're OK at that but we're better off concentrating on developing new games. There's a lot of future with 3D *Freescape*-style games."

MORE POWER, HIGHER PRICE

• RISC business: Archie m be more powerful, but more expensive

Archimedes buyers can now expect to receive the machine along with super fast operating system RISC OS as well as three impressive multi tasking programs.

However, much of the range has been hiked in price to compensate for the extra goodies. The Archimedes 310 goes up from £835 to £899 whilst the 310M goes from £895 to £959. The Archimedes 440 stays at its present price of £2,529.

Although many have complained that the Archimedes is too expensive the firm maintains it is offering power for an inconsiderable price increase.

Users can now run their machines at even faster speeds. More importantly, though, the Archimedes offers true multi-tasking – the ability to work on more than one program simultaneously.

The price hikes have convinced some that Acorn will indeed launch a stripped down low cost Archimedes this summer (*Express* 20) which will offer punters 32-bit technology at 16-bit prices.

Along with RISC OS will be a text editor, drawing package and art suite.

"It makes the machine £100 more valuable since we're giving away a powerful suite of multi tasking software, and the machine will be faster," said Acorn's Michael Page.

Meanwhile, Acorn has also bumped up the price of its BBC Master 128. That changes from £399 to £439. The firm says the price has not changed in two and a half years, during which time components have become more expensive.

Primaries and portables

Primary schoolkids in Shropshire may soon be provided with Z88 portables.

Manufacturer Cambridge Computer is hoping to supply 220 schools with the machines which would be used for simple word processing and data handling. Portables are popular amongst teachers many of whom find stationary workstations restricting.

Body beautiful

Far from being the bunch of fiercely competitive cut throats some might suppose, those people who actually produce your games software are really nice and cuddly.

And just to prove it they've all teamed up to form an 'industry body' with the aim of making computer gaming incredibly popular amongst the great unwashed who are currently vegetating in front of their television sets. The Entertainment Software Publishers Association (ESPA) points out that the more people there are playing games the bigger the market is and the bigger choice of better products you'll get. The chaps are also hoping to swell their bank balances. ESPA hopes to achieve its goal by publicising games on TV and in newspapers.

Networking it off

Ashton-Tate – responsible for the well known database product *dBase* – is about to start shipping *Framework III LAN*, the network version of its fast-selling integrated applications program *Framework III*.

Framework III LAN offers the database, spreadsheet, word processor, business graphics and outliner of its single-user stable mate, but has the ability to support up to five users, allowing them to share files and communicate with each other using the electronic mail feature provided.

It offers full compatibility with all the popular networking environments such as Novell and 3Com and will run on any IBM micro – including the PS/2 range and compatibles.

Framework III LAN costs £995, although existing owners of the single-user version can upgrade for £495. Further details can be obtained from Ashton-Tate on 0628

TOP 20 *Full Price* GAMES

1	**Robocop** OCEAN *Spectrum, C64, CPC, ST, Amiga*		1
2	**Dragon Ninja** OCEAN *Spectrum, C64, CPC*		3
3	**Operation Wolf** OCEAN *Spectrum, C64, CPC, ST, Amiga*		2
4	**Emlyn Hughes** AUDIOGENIC *Spectrum, C64*		7
5	**Middle Earth** MELBOURNE HOUSE *Spec, C64, CPC, ST, Amiga, PC*		4
6	**In Crowd** OCEAN *Spec, C64, CPC*		8
7	**WEC Le Mans** IMAGINE *Spectrum, C64, CPC, ST, Amiga*		6
8	**Afterburner** ACTIVISION *Spectrum, C64, CPC, ST, Amiga*		5
9	**Arcade Muscle** US GOLD *Spectrum, C64, CPC*		NE
10	**Double Dragon** MELBOURNE HOUSE *Spectrum, C64, ST, Amiga, PC*		11
11	**Pacland** GRANDSLAM *Spectrum, C64, CPC, ST, Amiga, MSX*		17
12	**Football Manager 2** ADDICTIVE *Spectrum, C64, CPC, ST, Amiga, PC*		13
13	**Batman** OCEAN *Spectrum, C64, CPC, ST, Amiga*		18
14	**Thunder Blade** US GOLD *Spectrum, C64, CPC, ST, Amiga*		9
15	**Combat Pilot** DIGITAL INTEGRATION *ST, PC*		NE
16	**Denaris** US GOLD *C64, Amiga*		10
17	**Fun School 2** DATABASE/MANDARIN *Spectrum, C64, CPC, ST, BBC*		14
18	**Falcon** MIRRORSOFT *ST, Amiga, PC*		12
19	**Four Soccer Sims** CODE MASTERS *Spectrum, C64, CPC*		RE
20	**R-Type** ELECTRIC DREAMS *Spec, C64, CPC, ST, Amiga*		RE

TOP TEN *Budget* GAMES

1	**Turbo Esprit** ENCORE *Spec, C64, CPC*		NE
2	**Treasure Island** CODE MASTERS *Spec, CPC*		1
3	**Spy Hunter** KIXX *Spectrum, C64, CPC*		6
4	**Joe Blade 2** PLAYERS *Spectrum, C64, CPC, BBC, Electron, C16*		2
5	**The Double** ALTERNATIVE *Spectrum, C64*		NE
6	**Super Cycle** KIXX *Spectrum, C64, CPC*		7
7	**Ghostbusters** MASTERTRONIC *Spectrum, C64, CPC, Atari 8-bit*		3
8	**Pinball Sim** CODE MASTERS *Spectrum, C64, CPC*		RE
9	**World Games** KIXX *Spectrum, C64, CPC, MSX*		4
10	**Street Gang** PLAYERS *Spectrum, C64, CPC*		Re-1

RE re-entry • NE new entry • Last week's positions

Compiled by Gallup

The charts shown are based on the Open Market, that is retailers who stock a broad range of products. All charts shown are copyright of Gallup.

Empire building

As if there weren't enough software labels to choose from already, out pops Empire, the latest label from Entertainment International – which also handles Titus (Crazy Cars), Creation (Stormtrooper) and Readysoft (Dragons Lair).

Empire currently has two games under development on the ST, Amiga and PC – with 8-bit versions under consideration – due for release in the Summer. First out will be Sleeping Gods Lie, an arcade adventure featuring 64 different landscapes, populated by monsters ranging from giant mice to icy snowmen.

The second, Time, assigns you with the task of building the perfect android by visiting five time zones and collecting objects from the likes of Julius Caesar and Florence Nightingale. No price has yet been set for either game.

MARTECH JUMPS FIRST HURDLE IN CRUCIAL REVIEWS CASE

The long running row between a software house and games magazine over the ethics of reviewing a new title has taken another twist.

Martech has won an initial court hearing against *Commodore User* over a full review of *Phantom Fighter* which appeared in the mag late last year. Martech alleged that *CU* had been given a pre-production copy of the game for preview purposes only.

It also says that *CU* had been informed that the game was not finished and needed tweaking. Martech says it sent the game out to give *CU* a taster of what was to come.

However, Martech was furious when *CU* gave *Phantom Fighter* a full review – and slated the game. Now it has jumped the first hurdle, Martech plans to sue EMAP – *CU*'s publisher – for " a six figure sum".

"A lot of time and money goes into a game but we can't put up with deliberate acts such as this," said Martech boss David Martin to *Express*. "Someone needs to take a stand. There are sections of the press which need to realise that they have to play by the rules."

The *CU* review was the first onto the streets. Martech contends the uncomplimentary review damaged sales of the game. It also believes that positive reviews in magazines such as *ACE* and *The One* will back up its case. EMAP is expected to appeal against the court decision.

• Martin: Taking a stand

Martin pointed out that software publishers need to be able to trust magazines with pre-production copies of games. Some magazines – including *Express* – have a policy of only reviewing the version which the public buys.

Gallup – the pop music chartist – is to be presented with none other than a platinum portable computer.

The generous company behind this is IBS Radix, which supplies all the record shops with Epson PX4 portables. The record stores use them to record which records are sold. IBS has sold 1,000 of the machines – hence the presentation.

• Gone platinum: Gallup get a new portable

PC COMPATIBLE WARGAMES TRILOGY BY R.T. SMITH

DESERT RATS (£19.95) starts the trilogy with Montgomery driving Rommel out of Libya into Tunisia in 1942. VULCAN (£19.95) takes up the story to where the Axis Forces are driven out of North Africa in May 1943. ARNHEM (£19.95) simulates Montgomery's airborne assault in 1944 behind enemy lines to capture the vital bridges for the advancing 30th Corps.

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PS. Sorry, we just don't have the time to give personal replies, whether you include an SAE or not. We're too busy putting Express together!

WHAT A BINDER

Are there going to be any binders available in the near future? I have every issue of *Express* so far, and am noticing a growing stack, and I like to keep decent mags in decent condition. I am really pleased with *Express*, and wish you all, future prosperity (gi's a job!)
K D Ellis, Chelmsford, Essex

● ***I could do with a binder myself now you mention it, but demand so far hasn't convinced the powers that be to get any run out. Tell you what, if I get a dozen requests for binders in the next couple of weeks, I'll do my best to push it through.***

8 BITCH

I wish to point out that some letters in *Express* 20 ('Tandy RAM', Tech Tips and 'Family Favourites', Express Mail) also appeared in one of your rivals the same week.

May I also take you to task and say that to reply to a plea for coverage for other 8 bit computers with the reply that I quote "It's too much trouble" is just not good enough. I would suggest that there is too much space given to STs and Amigas as these have their own dedicated magazines. The Speccy is also well provided for as is the Beeb. I would have thought that others could be given occasional space without too much trouble. After all we pay for the mag and if you can't be bothered you give up and let others do the work.

Even so I still enjoy the mag and have purchased it since issue one. I have a variety of computers including an ST, so I am not biased against any of them.

I'm also looking for another to 'upgrade to' but can't find one to suit. Amiga: too many faults. Archimedes: too dear. Amstrad: old chips.
J Bentham, Loughborough, Leics

● ***Well, we had noticed, actually, but there's not much we can do to stop people sending the same letters to both magazines at the same time – other than remind them that if they're found out they'll get the mickey taken out of them mercilessly.***

Of course it would be wonderful to have more coverage (i.e. more columns) for 8-bit machines. Regular columns would force the price of Express up, and as for occasional coverage, how much use is it to the reader to be told that your annual Oric column is coming up in nine months' time? We don't exclude the Atari 8-bit, Z88, Psion Organiser, Dragon, Oric etc. through spite, only economics and time-and-motion.

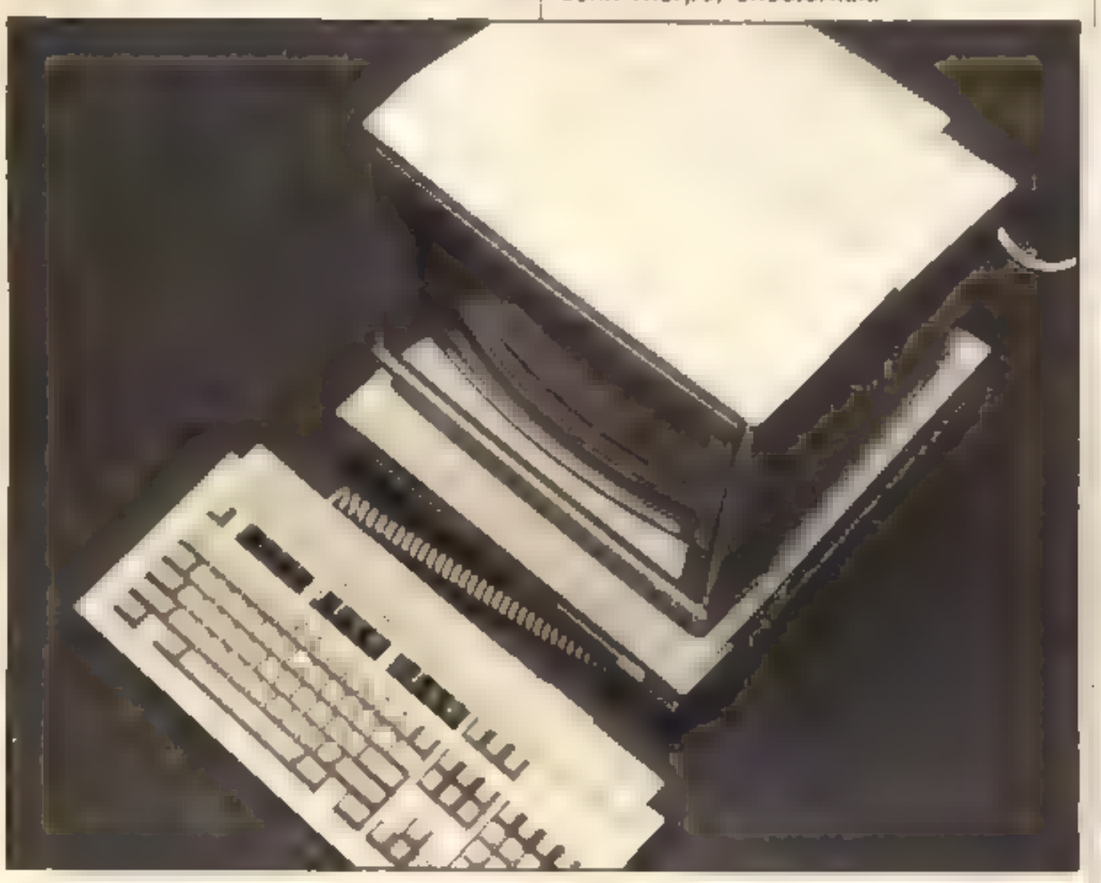
As for the upgrade, the rumoured £500 Archie possibly out in the summer might be what you're looking for. But please, no more verbless sentences. Bad for our image. Too sharp. Crude and clumsy.

JOIN THE PCS

First of all, please accept my congratulations on a truly excellent magazine. I have yet to find another publication that is as informative and witty as yours on computing as a general topic.

My main reason for writing is to tell all the PC users out there that there is more to life than Amstrad! I am the proud owner of an Atari PC3, which in its 30 MB EGA form comes in at only £800+VAT. That is some £150 cheaper than any rival I have yet come across, yet not a word is to be seen in any computer publication. Come on *Express*!

Finally, would anyone happen to know the phone number of the girl that modelled for *Teenage Queen...?*
John Thorpe, Chesterfield



• A £500 Archie would start up a whole lot of new arguments: my QL's better than your Archie, my Archie's better than your Cray etc... (8 Bitch)

● ***Opinion here is that the Atari PC3 is a good, usable machine – great for the price – the only problem being that it isn't very expandable. Next time we do a PC buyer's roundup we'll keep it in mind (though there'll be competition from all the new low-cost higher-spec PCs like the Opus IV).***

I can remember about the phone number is that it begins '0898' and is charged at 38p per minute peak, 25p per minute off peak.

LES FEMMES FATALES

In 'Nookie Hole' in *Express* 19 you were disappointed at the fact that no feminists had written in to complain about your reviewing games like *Teenage Queen*.

Well, I'm not a feminist, but I would like to say something on the subject of soft pornography in software. I think I'm right in saying that most computer gamers are in the 13 to 16 age group. I think it's fair to say that at this age we are all very vulnerable to the persuasions of the media, especially when they use sex in a product, or to market a product, as we've seen in recent computer games. I'd like to ask the question, should something as inhuman and emotionless as a computer be allowed to portray sex, or sexual fantasy? The reason I ask this is because as I said 13 to 16 year olds are emotionally vulnerable, the sexual emotions are very new and often daunting at this age, and when pornography is pushed at people (mainly boys) it's very hard for them to resist, because they don't really know any better.

I don't blame people for buying the games, I do blame those who created them, especially the women who are involved. If they didn't make themselves available for pornographic use, then it just wouldn't happen, but these days, big tits and big bucks go hand in hand – ask Sam Fox or Maria Whittaker.

I think computer porn, like strip poker, should be treated as porn, i.e. stuck on the top shelf with an age limit. The fact that young people can buy it just doesn't seem morally right somehow, so I think it's up to you adults in a position of some power to stop reviewing them. Sleazy sex has infiltrated just about everything, music and video especially, just to make money, so why not keep computer games sacred?
Nicholas Turner, Aylesbury, Bucks

● ***There's nothing wrong with sex per se (or rather per duo); after all, it's cheap, doesn't contribute much to the greenhouse effect, and unlike most games you don't need eleven a side or any special equipment to play it. There's far too much violence in life and computer games generally but I don't think there's nearly enough sex. The thought that it must be kept a secret from everyone under 18 makes is laughable; after 200 million years of most life forms depending on it for their survival it can't be much of secret any more.***

Surely the only way to improve things is to

QL QUIBBLE

Methinks John Torofex speaketh with forked tongue! QLoser (*Express* 20) is quite a beef! Sir Clive has made his mistakes (haven't we all) but for all that the QL is a machine far in advance of its time.

A bad start has given it a bad name but user wise it is a good machine. multitasking plus SuperBASIC (enhanced with Tony Tebby's toolkit) makes it the envy of many other amateur computer users. Indeed your own QLcorner voiced by the same John Torofex points out the excellence of some of the available software. So too some of the magic names: John Silk, David Batty, Roy Barber, Dennis Briggs and many others are still working with and for the QL: it is a pity that Alan Sugar (with his marketing genius) decided that it was perhaps a bit too good for the Amstrads and the PCs, if he had put as much energy into the QL as the ancient Spectrum, users today would be very happy!

The much maligned microdrives could still be used as tape streamers and offer better storage than tape cassettes. The high price and shortage of some chips has made disk drives and extra memory expensive but even then the QL is very competitive with 1512s and 1640s and other cheaper PCs.

There I've had my say. More power to your QL corner (why not a full page?) You will fill a gap left by empty shelves bereft of the QL World!
S Spiller, Bournemouth Dorset

MYSTERY PRIZE

● ***I'm not sure about this argument that says we should allocate space to columns in inverse proportion to how many magazines there are for that machine. This would lead us to have nothing for the PC, ST and Amiga, a page for the QL, and special 16-page supplements for users of the abacus, mouse mat, logarithms and Napier's Bones.***

We'd like to send you this week's mystery prize for your spirited defence of this much-maligned machine. We'd like to, but we don't have any QL software – so we're working on it. Keep watching.

• Should games like this be regarded as soft porn and go on the top shelf with the girlie mags? (Les femmes fatales)

anything about sexist combine harvesters.

GETS MY BACKUP

Why don't software companies include a backup disk in disk based games and label it 'backup'. This might defeat the object of pirating, it would also mean that the honest user would have a backup copy in case the original got damaged, also it would mean that the user could use the hacks published in magazines without the worry of nulling their original.

Patrick Downes, Pontypridd

● *A nice thought, but I think sales would drop a bit as the backups got passed around to friends; they'd halve, in fact.*

game being sold in MSX format. (Similarly, Batman is one of the best-selling games for the PCW but doesn't show on the charts for that machine either). They don't have anything against the machine!

Any Epson printer works with an MSX though you can't get the MSX graphics set printed out.

A PILLOCK WRITES

I am writing to correct your Beeb box writer's statement, "...you can't place a true virus on Econet...".

Where have you been? Placing a virus on Econet which will run without attention has been cracked by myself and a fellow bandit (hacker to you).

Suppose you have the latest virus to hit the Beeb, The Snail Virus, which slows down the computer. The virus maybe placed in the network managers directory which has privilege. How do you get it into the network managers directory? Sorry – but that would be telling.

Once the virus is in the dir., a boot file is created that automatically sends an event to every other station excluding the fileserver. The virus contains an interrupt that informs the net of its presence and then causes a second event.

The second event, usually found in memory at &A00-&B00 calls the code assembled at &900 which is the assembly code that slows down the computer. Simple yar?

But this is not the best method, there are two other ways but if I told you those you would be able to work out how to stop the virus before it had a chance to do anything.

So – why not pass this back to the school – maybe they could use it to stop the array of viruses I have planned although I very much doubt it.

By the way, I no longer go to Raynes Park, I left two years ago. I am now in my last year at college. My viruses are past on by a friend.

If you wonder why I write viruses the reason is simple – I get a kick out of computer users *****ing themselves!

It's coming the biggest virus you have ever seen from Hackers UK Limited!

This is not a joke.

The Beeb Bandit, Hackers (UK) Limited, Surrey

● *Do you also get a kick out out of computer users thinking what a boring prat you are? Go away and play, sonny.*

DRIVES ME SANE

In *Express* 20 you published my letter enquiring about an additional disk drive

educate people into a more sophisticated way of thinking: that it's the exploitation of sex which is bad. Which means reviewing it impartially and without prejudice or false morality. Which is why our reviewer said last week of a strip poker game: "Why do we bother reviewing this at all? Because, like all the others, it's crap. And this needs saying. Otherwise, it'll end up selling on the dubious delights of packaging alone". Putting the strip poker games on the top shelf would only make them sell more for precisely that reason.

MONEY GO ROUND

I remember the day when I rushed out and bought an Atari VCS console and a *Space Invaders* cartridge (£29.95) and thought that it was wonderful. There was no way to copy the cartridges (that I knew of) and if I wanted a new game I had to save up for it. The high price of the cartridges stopped me buying a lot of the new titles that came out every month, but I was always told that if enough of us bought cartridges the prices would come down. Did I feel a plonker after buying twenty cartridges for my machine? Yup!

The price of the cartridges eventually fell when Atari hit trouble after making too many copies of *ET* – guess who bought that damn thing as well?

The point I am trying to make is that Atari would have continued to sell the cartridges for £29.00 plus for as long as plonkers like myself would keep buying them. Today's software houses are no different. They offer us pathetic 8-bit conversions that nobody would dream of buying and then complain that pirates are the one doing them out of business.

When you happen to buy a new bit of software and find out that it's junk you cannot take it back to the shop to get a refund as they think you have pirated it. The argument of 'try before you buy' does not really help as most shops are not interested in loading games up for you. So what can the poor punters do?

My definition of a computer game: Something that will entertain, stimulate and give all round enjoyment to the buyer. How does this help the user out?

Well, under the sale of goods act an item you purchase must be fit for the purpose its manufacturers' blurb tells you. If you buy software and find out that it does not stimulate, excite or give you enjoyment then surely that is breaking the said act and you can get a refund or another bit of software that will do the job it's intended to.

Gordon Keenan, Glasgow, Scotland

● *It's a tempting argument, though it would allow you to take back records you didn't like after all, books you thought weren't all that interesting, magazines you though were not all they could be, and so on. Ability to excite, stimulate and entertain are such subjective things you would be very hard pushed to return something as unfit for its purpose claiming it didn't do those things for you.*

Your main point is quite fair though. Games still seem very expensive for what they are, and I've never seen a satisfactory explanation of where the money goes. We plan to look into it in a future issue of Express.

PHOTOGRAPHY ENTHUSIASTS – ALL MSXISTS?

Commenting on N Alefounder's letter in *Express* 20 you compare computer enthusiasts with amateur photographers.

Falling into the trap that most of the general public fall into also, you write "looking at their appallingly sexist magazines/combine harvesters and naked women" etc. You automatically condemn all amateur photographers as being perverts.

The "appallingly sexist magazines" are not ours. They are the product of the publishers who in their misguided wisdom think that soft porn covers sell more of their magazines, and letters of protest from their readers cannot move them from the habit of them printing covers that way. Other aspects of photography would be more appreciated by most amateur photographers.

Personally I would much prefer to have photographic magazines with front covers on the same lines as your own, and I must say very admirable, magazine. From your comments I can take heart that in the future I can take off the newsstand my favourite computer magazine, without the feeling that looking over my shoulder is someone thinking "there goes another dirty old man".

PS Long live MSX!

Ken Cutmore, Durham, Co. Durham

● *Fair enough: I stand corrected – I hope that you speak for the silent majority of photo enthusiasts. But I don't remember saying*

MSXTREMELY GLAD TO HELP

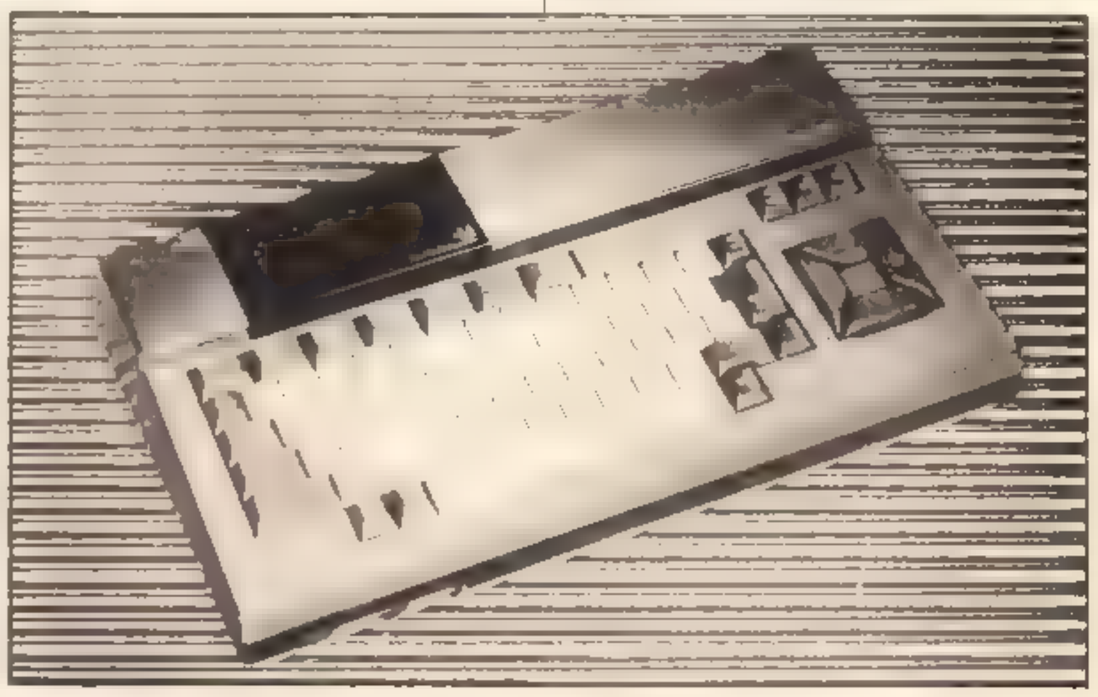
I have used a Toshiba HX-10 for a long time but recently bought a HX-22 at only £25. Although I bought it in a shop, no manual was supplied, hence the low price. The only thing I am stuck with is how to use the built-in word-processor. Is it possible for me to obtain a manual? I would be very grateful if someone would lend me one for a while.

Incidentally, why does the Gallup Top 20 fail to mention, in the full price section, that certain titles are available in the MSX format? To be precise, *Robocop*, *WEC Le Mans*, *Operation Wolf*, *Pacland* and *Afterburner*. A glance at the chart by the un-informed would lead them to believe that MSX had been abandoned by the software houses, apart from one or two budget releases.

Can you tell me which of the cheaper printers are suitable, i.e. compatible with MSX machines?

Andy Singleton, West View, Chapel Bank, Jackson Bridge, Huddersfield, HD7 7HR

● *Gallup bases its charts on a certain selection of shops, and if those shops show no sales in that game for the MSX, then Gallup don't know about it. As many MSX games are sold through specialist mail order places Gallup only get to hear of the odd*



• The MSX isn't listed in the charts: proof of the great anti-MSX conspiracy theory! I know you all say I'm paranoid behind my back, but it's not true... (MSXtremely glad to help)

SNIPPETS

NEAT ELITE

Just a quick thank [illegible] featuring the bugged versions of Elite in a recent issue. After reading it I phoned Firebird and to their credit they upgraded my version 1.0 disk in almost around tune of just over a week.
John Logan, Glasgow, Scotland

ACORNY SENTIMENT

There is a computer better than the Amiga: the Acorn Archimedes. With the arrival of a £500 Archimedes no one could say the Archimedes was overpriced.
Shardy Cadette, Walthamstow, London

● *It would add a new dimension to the eternal ST vs. Amiga debate too.*

CRASH COURSE

In *Express* 19 you stated that computers like my CPC 464 cannot crash, but if you look through the memory from the bottom up, you will come to a place in memory where you will crash the computer.
John Carter, Barrow-in-Furness, Cumbria

● *Er, I don't think we said CPCs don't ever crash – just that they're rather more robust than, say, oh, for example, off the top of my head, er, the Amiga.*

PRAT ON THE BACK

After reading the second of the two letters from 'The Beeb Bandit' I felt unable to contain my fury. What a prat! If he thinks viruses are a matter for jolly good laughs, then he seriously needs a kick up the backside. If you are reading this you little twerp, then I hope you realise your immaturity.
Ed Ellis, Chelmsford, Essex

● *He's been at it again this week too.*

MATHS LESSON

Games pirated because of high price. If price rises so more piracy.
It's a never ending circle and the only way to break it is for the software companies to lower their prices (which US Gold have done, well done!)
Patrick Downes, Pontypridd

● *And Ocean are launching their first budget game – hopefully the first of many.*

for the Sinclair PC200. You gave me the advice that 'Amstrad make a 5.25 inch disk drive for this model and these should be freely available from the stockist from which the PC was purchased'.

On the face of it this would seem good advice, however Comet – who supplied the machine – do not stock disk drives. When I phoned Amstrad a voice that would not give its name informed me that if the machine had only one disk drive then it would be inadvisable to attempt fitting another. Perhaps I got the cleaning lady.

The good news is that my seach took me to CYCA of 287 Caledonian Road London, tel. 01 700 4677. They not only supply a drive for the Amstrad 2086 that is compatible with the PC200 (for £89+VAT) but they were exceptionally helpful, patient and efficient in their service. I now have the disk drive fitted and in future my trade will go to the supplier from whom I received help and courtesy. Good on you CYCA.
EP Ingram, Paisley, Scotland

● ***Glad you got sorted out, and we're happy to pass on the news.***

I doubt you did get the cleaning lady when you phoned Amstrad. She'd have been a lot friendlier and more helpful than any of the full-time employees.

WHICH HUNT

I would be grateful if you could recommend me a computer like a CPC or an Amiga or perhaps a games console e.g. Nintendo's or Sega's 16-bit machine or the PC Engine I can't make up my mind. Can you help?
Mark Ford, Nechells, Birmingham

● ***Well, the computer most like the CPC is probably the Amstrad CPC, and among Amiga-like machines the Commodore Amiga is probably the pick of the bunch.***

Seriously, the machine you should buy depends on what you want to do with your computer. Next week's feature lists the best buys in inexpensive home computers for all the uses you might want. How about that for a quick reaction to reader feedback?

INFO PLEASE

1 I am designing a newsletter on the topic of arcade coin operated games and the future of computer games. Could you please send me up-to-date information, philosophy and opinions about this topic and in any other aspect concerning this subject.
2 How do you, and many other companies possibly manage to fit the words all on one line with one space between each word? Is it that the Word Processing Package you use has a special feature in utilizing this function.
3 If the best software companies all joined together and formed a mega game incorporating their past achievements, wouldn't there be one fantastic game?

I know you are very busy and you have pointed this out in *Express*, but I must be persistent if I am to obtain results from a reputable company like yours. Thank you for reading up to this point and I am sure I will be anticipating a helpful reply.
Hanson Fernandes, Hayes, Middlesex

● ***1 All I can suggest for the coinops is that you get hold of issue 6 of ACE which was an arcade special, and wait for the issue of Express which has a feature on coin-ops (in three or four issues' time). Back numbers of ACE (or Express) available from The Old Barn, Somerset, Somerton TA11 7PY, Tel. 0458 74011. ACEs £1.75, Expresses 75p.***
2 The word processor we use is Macintosh-based and automatically justifies the text (i.e. makes both right and left margins even). Virtually all word processors do this, though, from Mini Office on the CPC to WordPerfect on the Mac.

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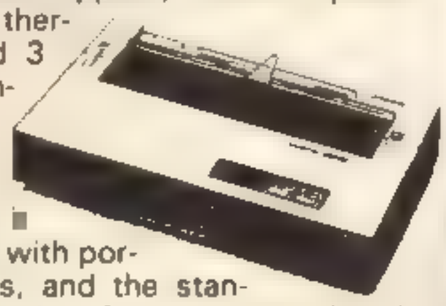

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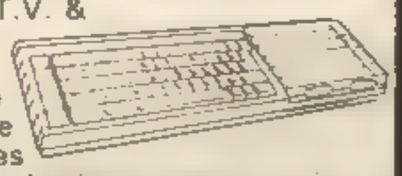

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Access

Hard decisions

A hard drive can replace a drawerful of data disks, a cupboardful of program disks and a binful of waste paper. What are the options, and the best buys, for your machine? Jerry Glenwright looks at how a hard disk can make for an easy life.

HARD DISKS

BUYER'S GUIDE

Until a year a two ago if – as a home or small business computer user – you had a floppy disk drive, you'd have been the envy of all those around you still using the dreadful cassette tape as a medium for backing storage. As they resigned themselves to the half an hour wait whilst *The Hobbit* came dribbling out of the cassette port at 300 baud, you'd be kicking Goblin ass...

Nowadays, with most users having at least one, and usually two, floppy disk drives, the talk is of 20 megabytes, 30 megabytes hard cards, seek times – what does it all mean? Do you really need a hard drive? Surely floppy disks are fast and safe enough as ■ storage medium?

With the advent of 16-bit computing available to users who previously would have been confined to Spectrums and Orics, the software houses have taken advantage of all this power and produced applications and games with raw computing needs unthinkable in the home and small business market until quite recently. Unfortunately, this translates to ■ need for lots of fast backing storage: enter the hard disk. Some of the desktop publishing packages which are very popular at the moment can't be used from floppies – at best, the process is awkward and requires several tedious changes of disk.

A hard disk can store vast quantities of data, and can transfer that data to the memory of a computer in the blink of an eye – literally! Hard disks make the use of large-scale complex business and games software much easier, by eliminating the need for constant swapping of floppy disks holding different parts of a program or its data. They are very reliable (if treated with care) and compact – the outer casing of a hard drive ■ usually no larger than that of a floppy drive.

The hard disk consists of a metal disk (known as the Platter) which ■ usually made from aluminium. The aluminium disk is inflexible, hence the name 'hard disk'. This disk is covered with a magnetic 'film' which allows it to store encoded information on its surface transmitted via a read/write head positioned above the disk. The whole thing ■ sealed inside an airtight metal case. This airtight housing allows the read/write heads to be very close to the spinning surface of the disk without actually hitting ■ (known as a head crash). The closer the heads can be to the platter, the more data can be written to and read from the disk.

Typically, the read/write head of a hard drive rides above the disk on a cushion of air 12 microns (millionths of an inch) thick. To illustrate how critical these distances are, molecules of cigarette smoke would be large enough to cause a head crash! A hard disk platter has a speed of revolution much larger than that of an LP (33 rpm) or the floppy drive's 300 rpm – approximately 3,600 revolutions per minute.

Some of the earlier hard disk drives had removable disk 'packs'. Several platters were contained inside a plastic outer casing with ■ handle, and the whole thing could be lifted in and out of the drive – thereby allowing hundreds of megabytes of data to be used with each drive.

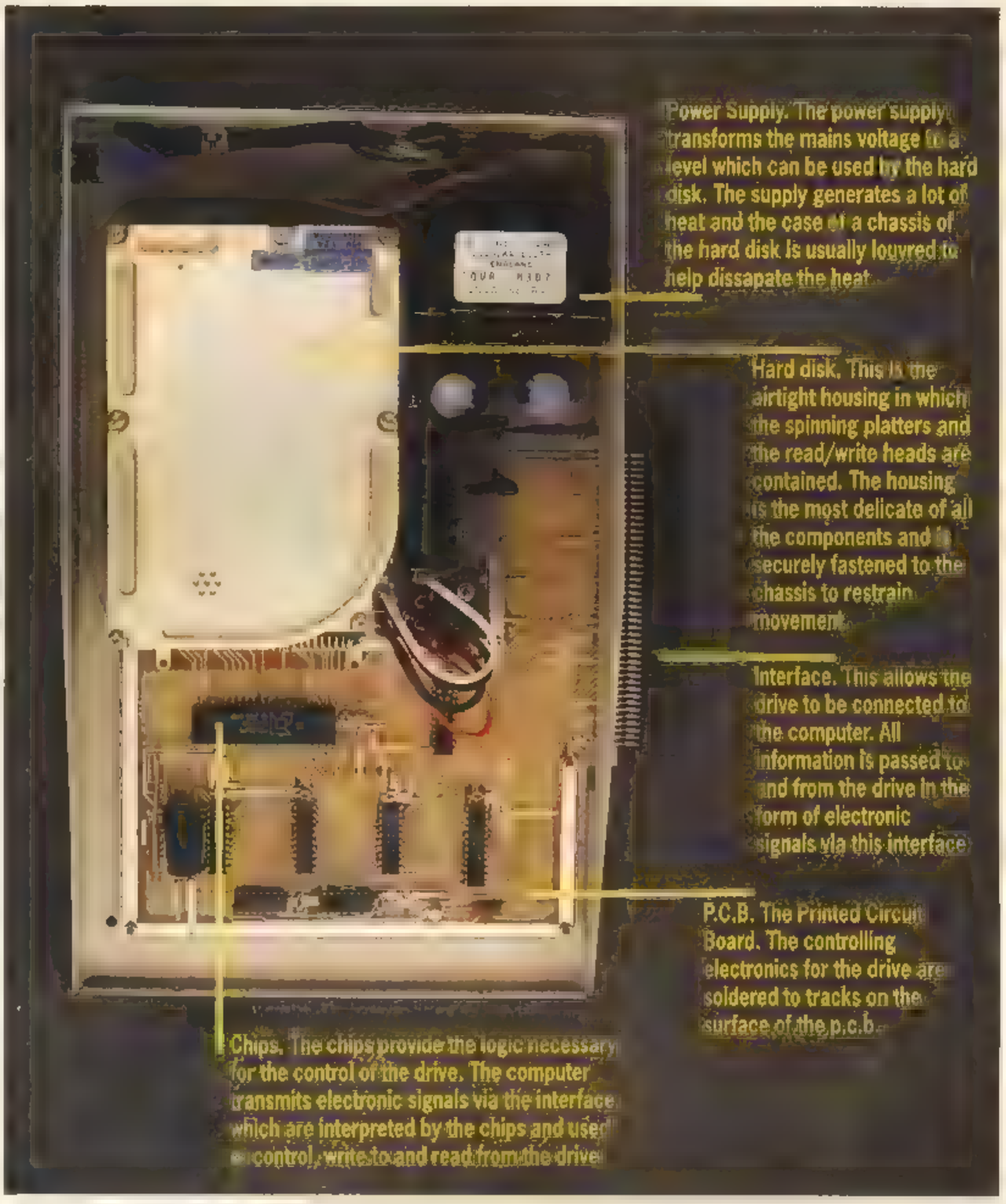
Modern drives usually consist of one or more platters, either 5.25" or 3.5" in diameter and with ■ storage capacity of anything from 10 to 300 megabytes.

To determine the merit of a hard drive the data transfer rate and the access times are taken into account along with the storage capacity of the disk.

The data transfer rate is a measure of the speed that the information stored on the disk can be transferred to the memory of the computer, and ■ given in Megabits/second. In the original Winchester drives – so named, because they were developed by IBM at their R & D labs based in Winchester, America, not the English cathedral town – used with the IBM-PC, the data transfer rate was 5 megabits/second i.e. around 600K per second! At the time, this data storage and retrieval capacity astounded the computer industry. With modern improvements in the controlling circuitry of hard drives, a rate of up to 10 mbits/sec can be achieved.

Access times are given in milliseconds and are concerned with the time taken for the read/write head to move to the desired track and also the time taken for the desired sector in which the data is stored to move under the head. Early drives had access times in the region of 80 milliseconds – nowadays, 20 milliseconds is a common figure.

From these figures, you can see that the use of ■ hard drive will increase your productivity by leaps and bounds – but is it really worth the several hundred pounds necessary for the average computer user to purchase one i.e. someone whose computing ■ concerned either with running a small business or for games, hobbies etc?.



• There's a lot of electronics beneath the outer casing.

Technobabble

Video production

Winchester (also Fixed or Hard disk)
Inflexible disk of magnetically coated aluminium, sealed inside an airtight case and used to store large quantities of data and access same at very high speeds.

SCSI (pronounced skuzzie (!))
Small Computer Systems Interface. One of the many interfaces used to connect a hard drive to a computer.

Tracks
Series of concentric rings magnetically 'laid out' on the surface of a fixed disk.

Sectors
Tracks divided up into small pieces in which data is written.

Head
A device positioned just above the surface of the disk which reads and writes data to and from the disk. There may be several heads contained within the sealed case of a hard drive.

Mb (a.k.a. megabyte)
Measure of hard drive storage capacity in millions of bytes. Basic units are usually 20Mb, but drives are available up to 300 Mb or more.

Access times
The time taken for the read/write head to travel to the desired track summed with the time taken for the relevant sector to come underneath the head – typically 20 milliseconds.

Gotta be hard to be easy

The first advantage when using a hard drive has to be one of speed. Using software such as a thesaurus from anything other than a hard disk would not be realistic. Imagine if every time you wanted to look up a synonym, you had to remove your word processor disk, remove your word processor data disk and insert two or more thesaurus disks into the floppy drives of your machine, wait until the correct synonyms were located and then reverse the whole procedure to reload your word processor!

Obviously, the point of using the electronic versions of useful tools such as the thesaurus and dictionary would be negated – it would be easier to use their paper counterparts. The hard drive though can provide you with the speed necessary to make using complex programs spread over

• A typical hard drive. This one comes from ASAP and is shown here in its pre-production casing.

several disks viable.

The amount of storage space available on-line is the next important benefit. Even the smaller 20Mb hard drives can store the equivalent of around 55 PC-type floppies, and let you access all of that data at a rate 10-fold (or more) greater than that of the floppy drive.

If you use your machine to compute the accounts and payroll of a small business, loading in the relevant data from floppies each day would be very messy and a waste of time! With a hard drive, all of your data can be stored in one place and examined and updated whenever it's required. You can then keep ■ back-up copy of the data on floppy disks just in case anything should happen to the fixed disk.

Avid games player? Then think how nice it would be to have all your favourite games contained within separate directories on a fixed disk. Rather than suffer the long waits associated with the loading times of some of the more complex (and usually, therefore, more interesting and playable) games, you would merely have to select the directory containing the game of your choice, issue the command to load the game and start playing almost instantly! No more tea-making whilst waiting for a game to load. No delicate floppies prone to damage. You can keep the 'master' floppy disks as a backup – in case you have a head crash!

As mentioned, some of the new in-vogue software packages such as the desktop publishers can't be used via floppy disks, so if you're interested in publishing an impressively put together newsletter, then unless you have a hard disk, you're going to have to enlist the services of a friendly publishing company

Hard cash

OK. You now know all about hard disks – how they work and what they can do for you, but what's available for your machine and how much is it all gonna cost you? Will you have to sell all your other hardware to afford one?

As with almost all peripherals, if you own an IBM PC or one of its many compatibles, then the world is your whelk etc. – a range of hard drives the size of a small planet.

Probably the cheapest option available to you is the Hardcard. The hardcard consists of a hard drive unit attached to a standard full length 8-bit PC exapansion card. All controlling electronics are also on the card – a complete unit. Installing the drive is simply a matter of opening the case of your machine and 'plugging' the drive into a free expansion slot.

Once formatted (the process of dividing up the disk into pieces useful to DOS), the drive is ready to use. Hardcards come in 20Mb and 32Mb sizes and are *very* cheap – about £220 for the 20Mb version.

Initially, hardcards had a bad reputation associated with their reliability (or lack of it), but as the technology has advanced, the hardcard has become as reliable as any other fixed disk device. Several of the large and well known drive manufacturers market hardcards so you can be sure of quality and service.

If you don't want a hardcard, then what else is available? Everything! All sizes, all configurations and speeds, at prices from several hundred pounds to a thousand or more. You must decide what it is you want to do with the drive and buy a machine accordingly. Choose a large manufacturer – they are more likely to offer a long guarantee and after sales service.

A large proportion of software written for the PC assumes the use of a hard disk, consequently, an easy installation process will be offered to enable the software which comes on floppy disks to be transferred to the drive – you don't even have to buy utilities to remove copy protection and allow fixed disk installation!

The hard disk *is the* peripheral for the PC owner thinking of an upgrade.

Pieces of 8 and 16

You don't own a PC? Don't despair, there will probably be a hard drive for your machine (even if it happens to be an 8-bit!).

There are several drives currently available for the Atari ST in ■ range of sizes from 20Mb upwards. Pricing reflects the small quantity of units which are sold in this country, so don't expect much change from four hundred quid even for the smaller devices.

The Commodore Amiga suffers from a similar fate as the ST – too few drives at too large a price. Although a company known as ASAP are about to market the Amdrive. This is a 30Mb machine of excellent specification and construction and with a very good price to match – £399 including VAT, which places it at the cheapest position in the market place. Check out our 'what's available' box for more information on ASAP as well as several other drive manufacturers.

The Amstrad PCW has only one fixed disk device. The drive is manufactured and marketed by a company called Timatic (see box for details...) and is known as the Winchester Expansion Box. It's a 20Mb machine which comes with a succinct – but informative – manual.

The other 8-bit machines are sorely lacking in available hard drive units, although there is a 20Mb device available for the Atari 8-bit. It's known as the Supra drive and is made by an American company known (not surprisingly) as the Supra Corporation – they also manufacture drives for the ST. The drives are distributed in this country by Frontier Software of Harrogate – see the 'what's available' box for contacts.

If you run a small business or you're a home user, then the hard drive will significantly increase your productivity, and enhance your enjoyment of computing by making the whole process easier and a lot more simple – and after all, that's what computing is all about! ●

Hard decision

You've read the feature, drooled over the pictures, now you want the hardware – right? Read our list to determine whether you too will be living with the hum of the fan...

PC (and compatibles)

Hardcards – usually available in 20/21Mb and 30/32MB configurations. One of the best is the Western Digital Filecard. £229 or £249 will bring you the 21Mb or 32Mb version respectively. Try Evesham Micros on 0386 765500, who will sell you one tested and formatted – and even include utilities to help you get the most from it. If you want a separate unit then typical prices are £230 – £250 for a 20Mb and £310 – £330 for a 40Mb drive.

Atari ST

Several drives are available for the Atari machine in a range of sizes. The Supra Corporation based ■ America market a number of drives via several distributors here in the UK. One of the best in terms of value for money and reliability is the Supra 30Mb machine, which retails at around £499. For this price you get the drive, a clock-card and a range of utilities. Try Silica Distribution on 01 309 1111. If you own one of the Mega STs then Silica also distribute the Megafile 30Mb machine which is specially designed to sit under the Mega's CPU case. It costs £499.

Commodore Amiga

Spoilt for choice! How about the Amdrive manufactured and marketed by ASAP? It's a 30Mb device with an average access time of 38msec – fast! Not only is it well-made and fast but it's CHEAP, £399 inc VAT. You want one? OK, contact ASAP on 0724 280222/281317. If you want to give your money away then you could buy the Supra 20Mb at £689 (available Silica distribution 01 309 1111) or the rather better value for money Vortex 40Mb which retails for £573. It autoboots from 1.2 and 1.3 versions of Kickstart (also available from Silica).

Amstrad PCW

Only one available drive – but better than none huh? The Winchester Expansion Box is a 20Mb drive costing £573.85, and is manufactured and marketed by Timatic, who can be contacted on 0329 236727.

Atari 8-bit

Yes! someone actually makes a hard drive for the Atari 8-bit machines. Supra Corporation in America (good guys or crazy depending upon your ownership) market a 20Mb hard drive, distributed in this country by Frontier Software of Harrogate who can be contacted on 0423 567140. Apparently, only one of these drives has been sold in this country in almost 18 months of marketing – who and where is this person? We'd like to talk to him/her...

The rest

If you, or someone you know, makes or markets ■ hard drive for the C64, CPC, Spectrum etc., then let us know and we'll pass on the good news.

MSXtinct?

Launched in 1983, the MSX was the state-of-the-art 8-bit micro. So what went wrong? Keith Neal looks at the Japanese invasion that never happened...

When you are asked what type of computer you own, and you say "MSX", the response is either a blank look or an air of amusement. But when you eventually persuade these enthusiasts to try out your computer, their remarks are often quite favourable. The machines are well-built, well specified and were as good as any 8-bit computer around in 1983 when the format was launched – and they probably still are amongst the best.

Why, then, did the MSX fail to repeat its success in Japan and take the UK market by storm? To answer this we first must take a look at how the MSX was first developed, and how the various manufacturers were persuaded to produce machines that were totally compatible.

Back in 1983, several of the large Japanese electronics manufacturers approached the Microsoft Corporation asking for a version of BASIC for their machine. Microsoft came up with a product called *Microsoft Extended BASIC*, or *MSX* for short. This idea whereby all the computers were to use the same BASIC was taken a step further when it was realised that this was the ideal opportunity to bring in a computer standard for home micros. All the major manufacturers were consulted, and the minimum specifications for the new format were agreed upon. This was how the MSX was born, with Kay Nishi of the Microsoft Corporation heading the development of this new standard.

When the format was launched in Japan in Autumn 1983, it was an instant suc-cess. Over 300,000 machines were sold within the first few months. Of course, they were selling to a "virgin" market, Great Britain where several different systems were already competing for dominance in what was the first country in the world to take up "home computing".

When the Japanese manufacturers realised the success they had achieved in Japan, the next obvious target was the UK. It was crucial for them that the MSX succeed here. With great publicity, and at great expense, the MSX was launched in the UK in 1984, with several of the manufacturers adding special features to their machines to make them more attractive.

The liquidating launch

This was the grand launch of the MSX, and an even grander disaster. You only have to look at the year of the UK launch to find the main reason for the failure of the MSX to capture the UK market. This was the year when nearly all the major computer manufacturers suffered heavy financial losses. Many, such as Oric, Enterprise and even Acorn, never did recover. In this climate, the overpriced MSX machines didn't stand a chance. Although the computers were well-built and quite well-specified, £300 was an enormous price to ask. The machines were also badly marketed, with hi-fi shops and the like suddenly selling unfamiliar products. The following year, the MSX manufacturers took the only course opened to them, and dumped their remaining stocks of UK specification computers at ridiculous prices. For example, you could buy a 64K Toshiba and data recorder for just £99. This of course meant that MSXs were selling like hot cakes (until stocks ran out), and Christmas 1985 saw the MSX the biggest-selling home computer that year – Toshiba brought their total sales in the UK to nearly 100,000 units. Estimates vary as to the actual number of MSx computers old in the UK, but it is probably about the 150,000 mark.

Of course, after getting their fingers badly burnt once, the Japanese were not going to get caught again, and found safer markets in Europe, South

What is this MSX business anyway?

The first thing to realise when the MSX is mentioned is that MSX is only a standard that the computers are built to. In fact, it is much like the DIN standard for hi-fi, where it was realised early on that to produce different records for varying systems would be expensive and absurd. Thus, the Microsoft Corporation, along with ASCII, came up with a set of specifications that the hardware and software producers had to adhere to, ensuring compatibility.

How, then, if you are a manufacturer of MSX computers, do you make your machine more attractive to the purchaser? The answer lay in adding features to the machine. For example, Sony produced the HB-75 with a built-in organiser program, and Yamaha's entry into the computer scene showed its logical approach to the subject by producing the excellent "music" computer, the CX-5M. This machine really showed the potential of the format, with some great software packages written for its inbuilt FM music synthesiser. Pioneer saw the need for a home computer with the ability to overlay graphics and text over video film track, and brought out the only MSX 1 that can still be purchased in the UK, the Pioneer PX/7. In fact, this computer could do more than just overlay graphics – if you were lucky enough to own one of Pioneer's early Video Disc players, you could play some really great interactive video games.

If there was one drawback with the MSX 1s, it was surely being limited to a 40-column display. This was to some extent overcome with the arrival of the Spectravideo Express, an MSX 1 with a built-in 3.5 inch disk drive and an 80-column adaptor, thus making it the first MSX suited to small business use.

Soon, the other MSX manufacturers realised the machine was very limited for serious use, and so the MSX 2 was born. These new micros were designed to be totally compatible with their predecessors, but used an improved graphics chip and 128K of video RAM. This new video chip gave the computers an 80-column display, 256 colours and improved sprite handling. These machines were not seen in the UK until 1986, and by then everyone was talking 16-bit. Seeing how the UK market was heading, the MSX manufacturers decided against launching the MSX 2s here and instead launched them in Europe, where they have been quite successful – particularly in Holland, Spain and Italy.

Now, the Japanese have brought out an enhanced MSX 2 – the MSX 2+. These machines are still 8-bit and still use the Z80 chip, but they have the ability to place 19,268 colours on-screen, have a 512x424 capability, "built-in" scrolling in all directions and an advanced 9-channel sound chip. We have yet to find out if these computers will be launched in the UK, though no doubt we will see some sold here on the "grey" market.

MSX tech specs

	MSX 1	MSX 2	MSX 2+
CPU	Z80 (3.58MHz)	Z80 (3.58MHz)	Z80 (3.58MHz)
VDP	TMS 9918	V9938	V9958
MSX BASIC	32K (ver 1.0)	48K (ver 2.0)	96K (ver 3.0)
MSX DOS	16K	16K or 48K (DOS2)	16K or 48K (DOS2)
Main RAM	8K-64K	64K-	64K-
Video RAM	16K	64K, 128K	128K
Picture element	256x192	512x212 (424)	512x212 (424)
Colour	16/16	16/16, 16/512, 256/256	16/16, 16/512, 256/256 (19268)
Scroll	-	UP, DOWN	UP, DOWN, LEFT, RIGHT
Sprite	32/SCREEN, 4/LINE	32/SCREEN, 8/LINE	32/SCREEN, 8/LINE
Audio	PSG (AY-3-8910)	PSG	PSG+FM (OPL)
Kanji system	-	-	VERY GOOD

PSG: Programmable sound generator (3 voice + 1 noise) **FM:** Frequency Modulation (OPL: 2 operator, 9 voice). very good sound

America and the Middle East. The UK MSX enthusiast has been left to fend for himself.

Fortunately, the large user base worldwide – over 4 million – means that there is plenty of games software about if you know where to look, and quite a bit of business software (for those who can read Japanese, Dutch or Spanish!).

The MSX 2 never did get launched in the UK, and it remains to be seen whether we will get the still Z80-based MSX 2+ here. Personally, I don't think any computers are going to sell millions in the UK any more, and the Japanese are interested only in volume sales.

What, then, does the future hold for the MSX user? There is still plenty of support from the larger software houses, and loyal support too from the many user groups. This should ensure that the MSX will still be around for many years. The machines still give any 8-bit a run for its money, and an MSX 2+'s graphics have to be seen to be believed. I can't see the Japs giving up without a fight. ●

Box of dates

1983: MSX is launched in Japan, and sells 300,000 machines in the first three months

1984: MSX in launched in the UK and fails disastrously

1985: Toshiba starts the price cut war in October, selling the HX/10 with data recorder, manuals, plugs and software all for £139.99

1985: Toshiba's UK sales hit 70,000 by Christmas

1986: Most of the MSX manufacturers cut prices to shift stock in Spring. The first MSX 2 computers are launched in Japan. They are launched in Europe later that year. Toshiba announces that when stocks of MSX 1 computers have been cleared it will cease to sell MSXs in the UK

1987: It is almost impossible to buy an MSX 1 anywhere. MSX 2 sells well in Holland

1988: Spain becomes the number one market for the MSX in Europe. The Spanish use the MSX in their schools, like we use the BBC here. Several Japanese producers announce a plus version of the MSX 2. December of this year, Philips ceases MSX production

1989: The first MSX 2+ computers are seen in Europe. When will we see them in the UK though...?

MSX trivia

- The rights to the name "MSX" are no longer owned by Microsoft, and owned instead by ASCII after the two companies fell out
- The MSX format is thought of as being Japanese, but Philips is Dutch, and Spectravideo is a joint American/ Hong Kong company
- MSX machines are even used in Japan as fax machines
- There are now well over 2 million MSX computers in Japan alone
- Spain is the biggest market for the MSX in Europe. The game *Basket Master* sold over 28,000 copies
- You can define 256 sprites on any MSX, and can place 32 on-screen at once. The MSX 1 can have only four per horizontal line, the MSX 2 eight

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Get yourself a WIMPY home

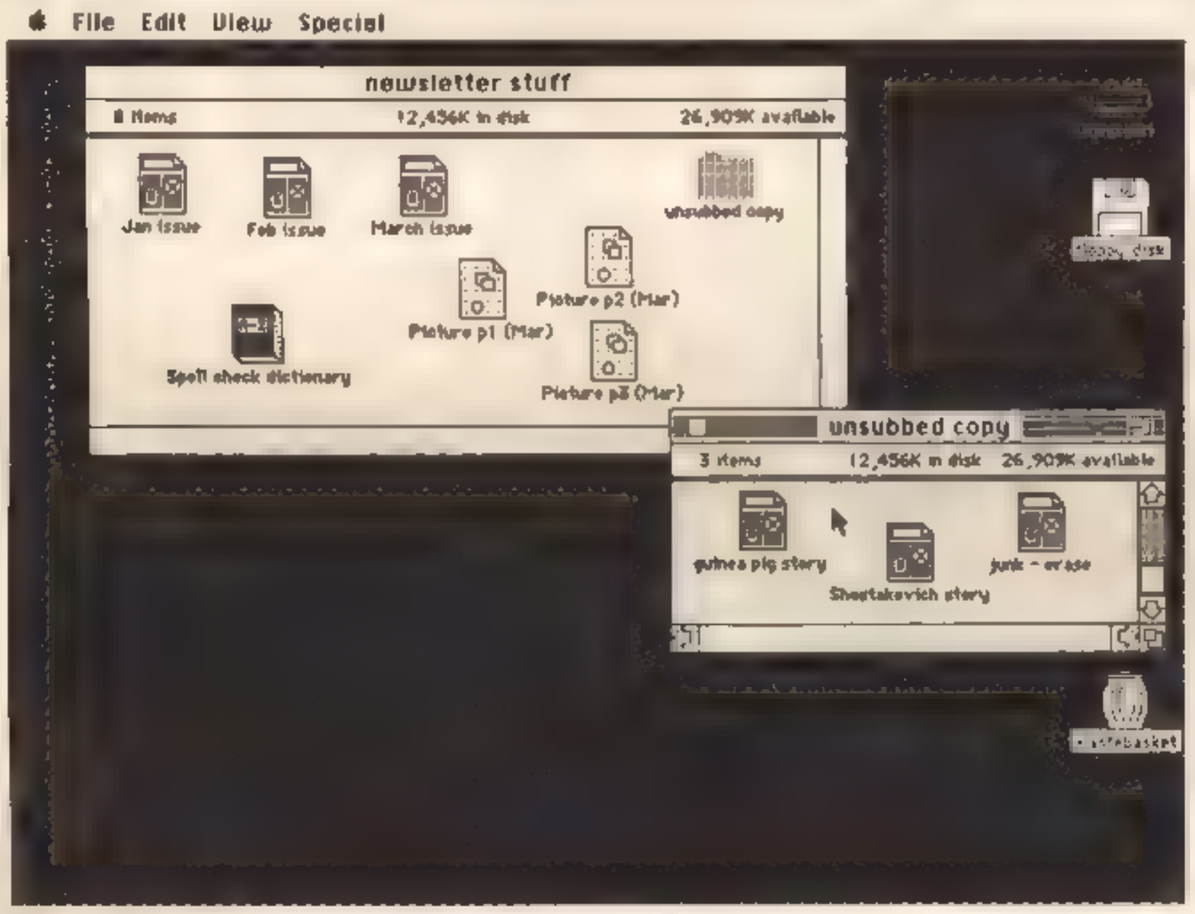
There are many odd beasts in the computer world, but two of the most picturesquely named must be the shell and the WIMP. Both, despite the former's hard and crusty name, are designed to make computers friendlier and easier to use. Peter Worlock prises open their secrets

Why such things are desirable or necessary is easily understood if you've ever worked with a plain vanilla MS-DOS or CP/M machine – like the majority of PC-compatibles and the Amstrad PCWs. By comparison, even primitive machines like the Spectrum and Commodore 64 are polite.

When you turn on a Spectrum or 64 you usually get a reasonably meaningful message like "OK" or "Ready". When you turn on an MS-DOS or CP/M machine you get the mysterious "A>". This is known as the A-prompt: the "A" tells you that the machine is currently logged on to disk drive A:, and the ">" tells you the computer is waiting for a command. It will be an interesting test of alien intelligence to see whether they can work that out without a hint.

Should you issue a command that the computer doesn't understand, things turn from bad to worse. Rather than offering a helpful "I don't understand" or "I can't do that" or even "Please refer to your manual", the computer is likely to spit out some terse and cryptic message like "BDOS ERROR ON A", or "Bad or missing file" (which is it ... bad or missing?)

This was presumably acceptable when computers were used by gung-ho hackers who spoke in opcodes and dreamed in hexadecimal, but when computers and mere mortals came face to face something had to give.



• In a WIMP system, files are displayed as icons in window-like compartments. Clicking on a folder – e.g. the 'unsubbed copy' icon – opens up a new window on screen, showing the files in that folder

Hard cases

The first attempts at putting a more presentable face on the operating system were known as shells. Not, as has already been observed, because they were hard cases but because they were designed to enclose the operating system and keep it away from us easily-startled humans. These shells were – and still are – for our protection, not the computer's.

The most common shells are based on the disk directory and employ what is known as the "point and shoot" technique. Basically, after the shell has loaded, its first task is to print on screen a directory of the files on the default disk drive and highlight the first one.

Using the cursor keys (or a mouse in more modern implementations) you can move the highlight on to other files. This is known as (ta dah!) pointing. If you wanted to load and run that file, you press the Enter key, or the space bar, or the mouse button. This is the shooting bit.

More complex operations, like copying or deleting a file, are again executed by first highlighting the file, then pressing an appropriate key such as "C" for copy, or "E" for erase (and hopefully not things like "R" for eRase, although this does happen).

This instantly makes life a lot simpler, since instead of having to remember lots of commands and their complex forms, you just point, and press a single key. However, you still have to remember the keys.

So the next development was the text-based menu. Here you don't even have to remember the keys because they're displayed on screen for you. In some instances you can simply point-and-shoot the menu selections.

Powerful WIMP

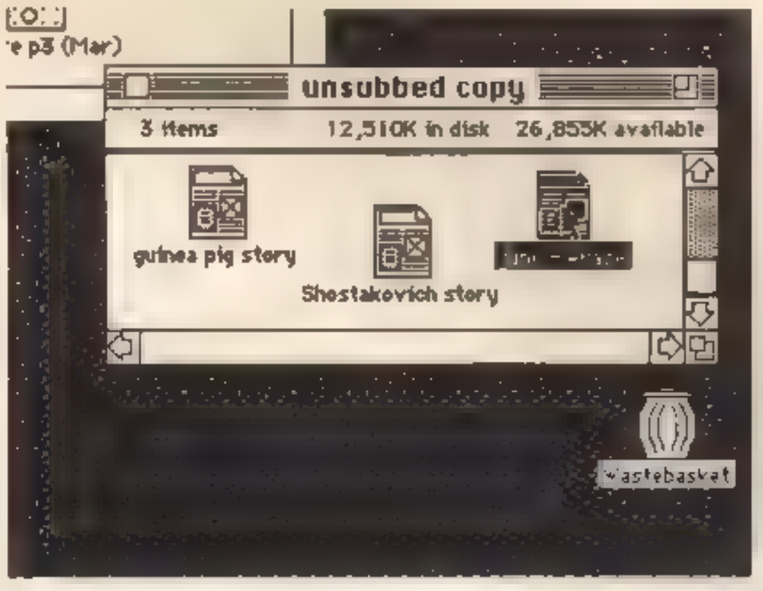
Meanwhile, Apple was tackling the problem of operating system hostility from a completely different direction. Adapting and developing ideas originated by Xerox at its Palo Alto Research Centre (PARC), Apple decided on a graphical approach.

The Apple method, used first on the less-than-successful Lisa before it resulted in the enormously influential Macintosh, relied on a number of graphical objects. The first of these is the icon: a small picture representing a disk, a folder (the sub-directory) and a file, as well as additional objects like the trash can or wastebasket.

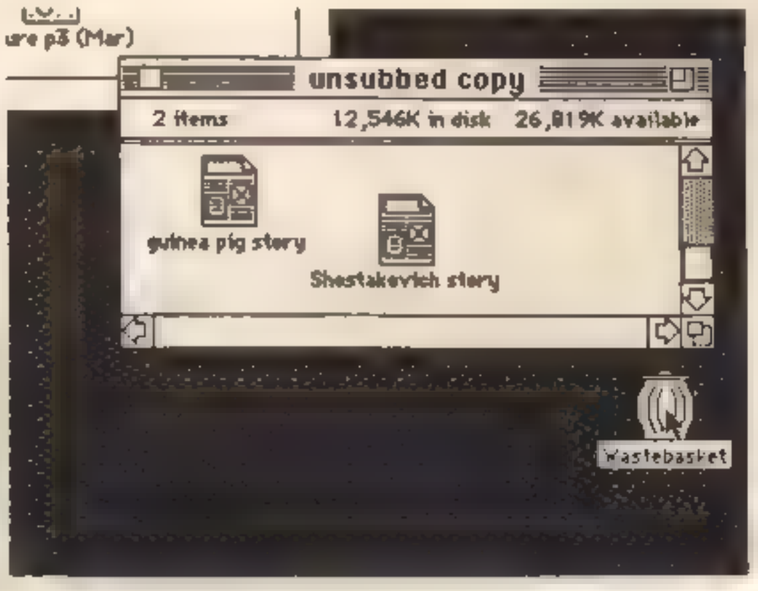
The second type of graphic is the window: a frame that can contain other graphics or text.

Third is not strictly a graphic, the menu. However, there are graphical aspects to these items because, rather than being permanently displayed like the earlier text menus, they can be scrolled down – like venetian blinds.

Finally, there is the crucial pointer, a small graphic cursor that is used to control and activate the other aspects of the



• Erasing a file in a WIMP system is easy: you click on the icon – it changes colour to show you've 'picked it up'...



• ...then you drag it into the wastebasket icon. It's now been erased

graphical operating system. The pointer is usually controlled by a mouse but can also be driven by joystick, tracker ball, digitising tablet or even the keyboard.

These four items give this kind of system its nickname: the WIMP (Windows, Icons, Menus, Pointer). It is a particularly apt piece of jargon because critics of the Mac and similar systems have always derided them as being for wimp users who can't get to grips with a real operating system.

However, this overlooks the supreme ease-of-use provided by WIMPs. They are not quite as intuitive as die-hard enthusiasts would have you believe, but they are far easier than traditional operating systems.

To copy a file from drive A to drive B, you simply select the picture of drive A which opens into a window. Then select the picture of the file and drag it to the picture of drive B. To delete a file, you drag its icon to the picture of the wastebasket. All far simpler than remembering and typing

COPY A:FILENAME.EXT B:
DEL A:FILENAME.EXT

which is the required form in MS-DOS, for example.

A WIMPish future

On the face of it, then, the WIMP ought to be a clear winner in the operating system stakes – and at first glance that would appear to be the case.

Following in the footsteps of the Macintosh are the ST with its version of *GEM* (Digital Research's *Graphic Environment Manager*), the Amiga with *Workbench*, the Archimedes with *Arthur* (or whatever it's called these days) and even the PC with *GEM*, Microsoft's *Windows*, and most recently OS/2 *Presentation Manager* from IBM and Microsoft. And further up the scale, Unix systems – once renowned for user-hostility – are sprouting WIMPs faster than acne on a teenage programmer.

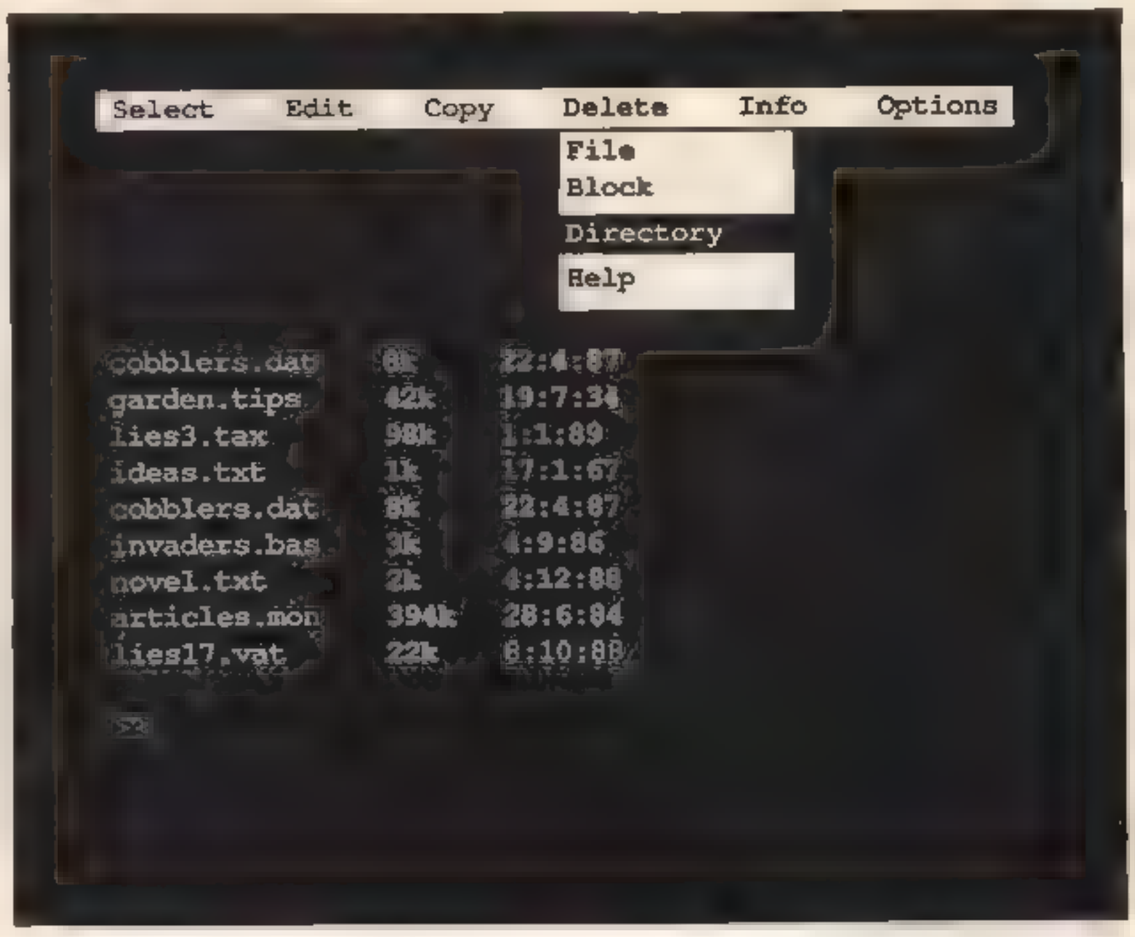
However, there are problems with WIMPs. Not least is the fact that they require a lot of memory, a high-resolution graphics display, and a fast processor. For this reason alone, many PC users, for example, prefer to stick with DOS itself or opt for one of the less sophisticated text-based shells.

WIMPs can also suffer the drawback that while they are excellent for first-time computer users and novices, they stand in the way of expert users. A related problem is that WIMPs cannot provide certain features of a command-line operating system, most notably batch files. A batch file is a sequence of of DOS commands that can be executed in sequence – for backing up related files, or automatically executing certain programs.

Third, unless the WIMP is an integral part of the operating system there is always the question of whether programs will take advantage of it. Although *GEM* and *Windows* have been quite successful on the PC, for example, there are still relatively few programs written for them.

Finally, it is ironic that the Macintosh system remains the best WIMP to date, despite being the first. *GEM* on the ST (and on a fast PC) is perhaps its nearest rival but the Amiga's *Workbench* and *Windows* on the PC lack the Mac's slick, highly integrated, and consistent performance.

But despite these problems, WIMPs are the way of the future. The WIMPish *Presentation Manager* is a key part of OS/2 on the PC, Unix is increasingly tied to WIMP front-ends, and the success of machines like the ST and Amiga among home computer users is ensuring that the next generation of business users will demand something more accessible from their machine than "A>". ●



• A typical 'point and shoot' shell display, where items required are highlighted from directories

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As fast as you scan

Want to capture images for use in your paint package ? Or for desk top publishing, word processing or inclusion in your database? If you don't want to splash out on a video camera and digitiser then a scanner might be a viable alternative. Andy Storer surveys the scene and checks out a typical package.

Hand-held scanners must be the cheapest way of transferring images to whatever software application you're running. A simple interface between the unit and your computer provides the necessary link to capture whole pages of text if needed. As such, the possibilities are endless – scan those photos for DTP, sketch a drawing and scan it for reworking in an art package or scan a page of text you want to refer to whilst word processing. As resolution compares quite favourably to the more conventional – and more expensive – digitiser/video camera option they're well worth checking ou.. And a lot less hassle too.

Scanners work by emitting light onto an image and collecting its pixel information by gathering the reflections with a lens and light sensitive cell. Mounted on a roller, the scanner is drawn across the subject, the number of rotations counted, the density of pixels recorded and the data transmitted to software for processing. As such, the speed of the scan isn't crucial – more important is an even movement. You need to make sure the original is on a flat surface, adjust the contrast control and make several test scans before deciding on the one to go for. And whether the image you're scanning is black and white or colour, the output is still converted into mono.

The least expensive scanners, costing around £200, will recognise only black or white and transmit pixel codes accordingly, but the £300 models will convert mono or colour images into something like 16 shades of grey. At present, there are no colour scanners available for the home/personal computer market, but then again there are not many digitiser packages that'll handle colour either.

Most home micro scanners within the £200-300 range – The Cameron Handy Scanners available for PCs, STs and Amigas and Daatascan from Kempston for STs and PCs – scan at 200 dots per inch resolution. But what does this mean in terms of the image you'll see on your monitors? This depends on two factors. First of all, the scanned image depends on the width of the scanner. Handy Scanners come in at a width of 64mm which translates to around 500 pixels per line. Given a nominal screen depth of 400 pixels, this approximates quite closely to most hi-res modes on 16-bit computers. If you want to scan larger images, you'll need to separately scan component parts in order to build up a composite image – quite a tricky task.

With Daatascan, the scan width is some 105mm, delivering an impressive 800 pixels on each horizontal line. The vertical length is much longer, however, as each scan lasts up to 4 seconds. You can thereby derive several screen depths in a single scan.

• The Daatascan offers three "dither" scan modes with which you can simulate shades of grey to effectively capture colour photographs

So in terms of pixel resolution, 200 dots per inch isn't bad at all – compare it to the 300 d.p.i. of a typical laser printer. Admittedly, you could also compare it to the 1200 d.p.i. of the Linotronic phototypesetter used to produce the words you're reading at this very moment. But then you'd be talking around £60,000.

• The scanned image quickly appears on-screen, where it can be sized and cut before saving in a number of formats for manipulation in art packages

• The saved image can then be loaded into a package like Hyperpaint, and if required taken down to a lower resolution for subsequent treatment with a full range of colours and painting tools

Thankfully, simply capturing an image and cutting it into a screen isn't the end of the story. Most scanner software allows for image export to art packages where you can recolour those shades of grey into something corresponding to the original. Or you can make sizing alterations, rotations, transformations – you name it. In this way, you can doctor images to suit your precise needs.

The scope of scanners is being taken further with the exciting developments to be found in the area of optical character recognition. Letters composing text have to be unjoined and resolution high enough to ensure the characters are unbroken, but given these two prerequisites, the scanned text can be compared to range of font data until a match is found. Obviously, how effective this is will depend on the ability of the software to cope with subtle variations in typeface and on the quality of the scan itself, but already Cameron's Handy Reader for the Amiga claims to allow text recognition at a rate of 10 characters a second with 98% accuracy. This package comes complete with Helvetica, TimesRoman, Bookface, Typeface and Digits fonts. If you want to scan any other typeface you have to choose the nearest corresponding example.

Where Handy Reader scores, though, is in its capacity to 'learn' typefaces whose characteristics you supply yourself. As this is time consuming, it will only be of value if you're regularly needing to scan a particular style of font. If only the scan width were closer to A4 then the system would be ideal for office use – as it is you're confined to relatively small areas of text. However, with the release of an accompanying A4 flat bed scanner later this year, this limitation will disappear. ●

● The Daatascan costs £275, is compatible with all STs and is available from Kempston Data on 0908 677886. The package is bundled with *Hyperpaint*, an above-average art package officially approved by Atari

● Handy Scanners for STs, Amigas and PCs start at £230 and are available from Cameron UK on 01 499 9192

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Lights, computers, action...

forward, directs a look at video production on the Amiga, and plays back the best buys around

When the Amiga was released, back in 1985, it not only attracted a great deal of attention from ordinary micro users, but also the video production fraternity – thanks to a little built-in Amiga feature called genlock. With a genlock hardware add-on device and a video source, such as a video cassette recorder (VCR) or video camera, you could overlay Amiga-generated computer graphics with the video picture to produce some stunning images.

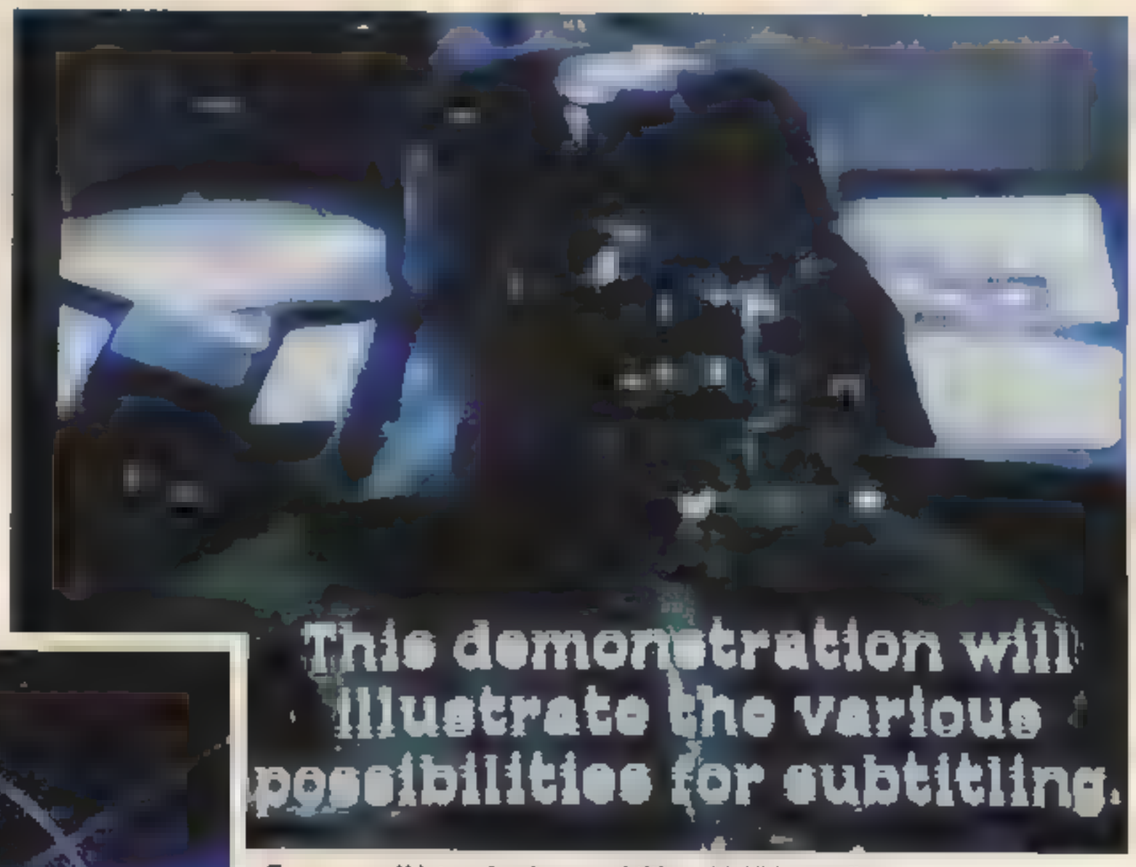
While many small-sized professional video production companies immediately took the Amiga to their hearts, using it in TV programmes like *The Chart Show* and *Network 7*, semi-professional and amateur video producers seemed more reluctant to adopt the Amiga in their studios and backrooms.

Sure, genlock hardware devices were readily available for the Amiga – from amateur to broadcast-quality decks. However, one vital ingredient was missing. The presence of high-quality video production software to go with them. After all, everyone quickly discovers state-of-the-art hardware is totally useless without quality software. Unfortunately, such was the case with the Amiga. The only decent video production software around was custom designed, and therefore not generally available.

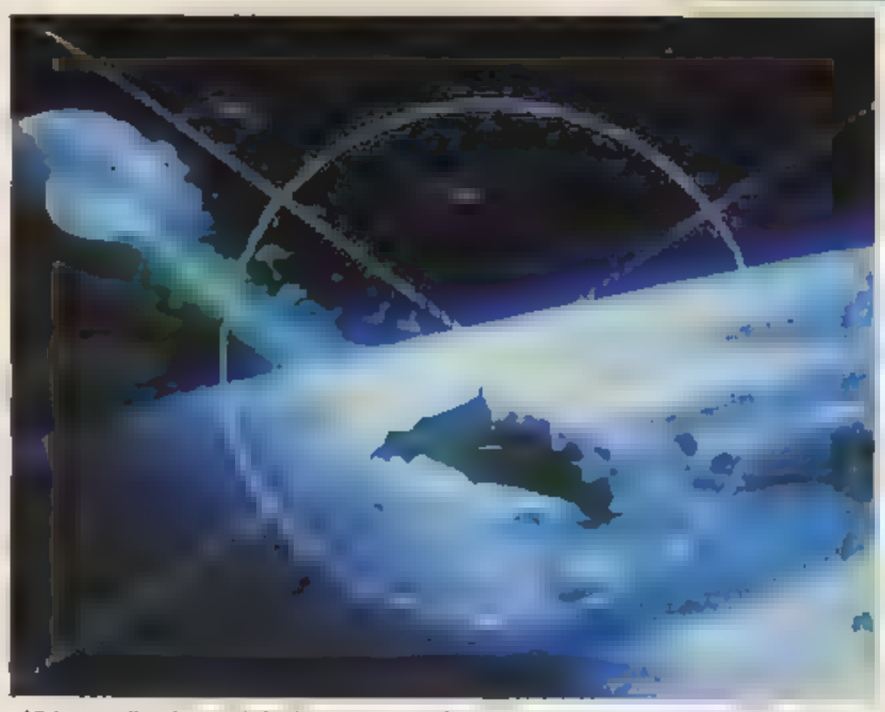
That is, of course, until now. Software companies seem to have seen this gap in a rather lucrative niche market, with the Amiga now undergoing a steady release of video production software. But do these software packages solve a home video producer's problems? Do they make the Amiga an indispensable video editing tool? Do they offer value for money?

Hardware

There's no shortage of genlock add-on devices available for the Amiga, with new ones frequently being added to the collection, and old ones constantly undergoing up-grades. With all classes of video production catered for, from backroom to broadcast-quality decks, you must answer the question, "What do I want to do with my genlock set-up?" before trying to choose the right genlock device for you.



• Turn yourself into a freelance subtitler with Videostudio



• Videostudio: A gunsight for your laser? (scan linearity test signal, actually)

• Use a paint package to customise your own logo and import it into Videostudio

MiniGEN ● Amiga Genlock device ● Around £115 ● Manufactured by Applied Systems and Peripherals on 0724 280222 ● Also available from Amiga Centre Scotland on 031 557 4242 or Maze Technology on 01 520 9753

MiniGEN (reviewed in *Express* issue 15) is a low-cost genlock device that acts as the perfect entry-level deck for the average home user. It includes a switch to select Amiga only, video only or mixed displays, but only works in background colour keying mode. Unfortunately, its display quality varies sharply, depending on the type of video equipment used.

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Commodore 2300 ● Amiga Genlock device ● Around £250 ● Manufactured by Commodore ● Available from Amiga Centre Scotland or Maze Technology on 01 520 9753

Commodore's own baby is an internal genlock, compatible solely with Amiga 2000 units. However, it's a little on the steep side considering it only works in background colour keying mode.

✪ ✪

Rendale A8802 ● Amiga Genlock device ● Around £285 ● Manufactured by Rendale ● Available from Amiga Centre Scotland on 031 557 4242 or Maze Technology on 01 520 9753

Rendale's *A8802* represents the best choice for the hardened amateur or semi-professional video producer, with near studio-quality display, and background and foreground colour keying modes.

✪ ✪ ✪ ✪ ✪

Rendale A8806 ● Amiga Genlock device ● Around £800 ● Manufactured by Rendale ● Available from Amiga Centre Scotland on 031 557 4242 or Maze Technology on 01 520 9753

Strictly for power Amiga video producers, this console comes in at a hefty price, but as they say, "You get what you pay for". The *A8806* produces broadcast-quality display, and includes background and foreground colour keying modes, and composite video or RGB mixing.

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We need help!

The Amiga, with its high specification graphics and built-in Genlock capabilities, overshadows other micros in the field of home video production. However, there are genlock devices available for these "lesser" micros, like the ST genlock add-on from Capital Computers on 031 228 4410. If you know of a genlock device for your micro, then please share that knowledge by writing to **Genlocked, Express Mail, New Computer Express, Future Publishing Limited, 4 Queen Street, Bath BA1 1EJ.**

Technobabble

Character Generator
A term used in the video industry meaning text related functions such as subtitles, credits, etc

Genlock
A hardware add-on device which produces a display overlaying computer-generated graphics with composite video images. This is achieved by synchronising or "locking" the computer's video output with the external composite video device which could be a VCR or video camera.

Keying
This is where the computer-generated image is overlayed on top of the video picture.

Mask
A computer-generated image such as a circle, square or even a gun-sight that is superimposed over the video image so that the video picture can only be seen through the computer-generated shape.

Video Production Software
A program used in connection with a Genlock device to produce such effects as subtitles, credits, title pages, screen wipes and masks, logos, time functions, test cards, etc

Wipe
A special effect used to help the transition from one video picture to another by superimposing a computer-generated image over the existing video picture (blacking it out), waiting for the new video picture to appear, then reversing the procedure so that the new video picture can be seen.

Video production

Software

The same "What do I want to do?" question applies when choosing video production software. With both amateur and semi-professional video producers catered for, the choice can be bewildering, frustrating and very expensive if mistakes are made. The only constant factor to this particular type of software seems to be totally extravagant pricing. This is probably due to the limited market out there. So wherever possible, it's best to try before you buy.

• Just to prove an ordinary paint package can produce stunning special FX

Videostudio ● Video Production Toolkit ● Amiga (1Mb of RAM and two floppy disk drives required) ● £92 ● Published by Z-Video Products, UK ● Distributed ex-stock in UK by Maze Technology

Also available Genlock/Videostudio bundles – Minigen/Videostudio (£193), Commodore 2300/Videostudio (£326), Rendale A8802/Videostudio (£339) and Rendale A8806 /Videostudio (£850). Further details from Maze Technology on 01 520 9753

VideoStudio is a complete suite of video production related functions covering titling (subtitles, credits, etc), wipes, masks, title screens, logos, clock displays and test signals. *Videostudio* is definitely a step in the right direction, but it could do with a fair amount of tweaking in its speed of operation and menu selection screens.

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DeluxePaint III ● Paint and Animation ● Amiga (minimum 1Mb of RAM required) ● £79.99 ● Electronic Arts

Although not specifically designed as a piece of video production software, *DeluxePaint III*'s impressive set of paint and animation facilities can easily produce some spectacular results on their own, or in-conjunction with a Genlock.

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DeluxeVideo ● Animation ● Amiga ● £69.99 ● Electronic Arts

DeluxeVideo can be used to produce animated computer "video" presentations, credit and title sequences and character generation using a multi-track spreadsheet-type controller, albeit in a rather cumbersome way.

✪ ✪ ✪

DeluxeProductions ● Video Production ● Amiga (1Mb of RAM required) ● £149.99 ● Electronic Arts

DeluxeProductions includes broadcast-quality fonts for titling work, over 40 wipes, and can animate titles using double-buffered animation techniques. At this price though, the performance/price ratio is undoubtedly underbalanced.

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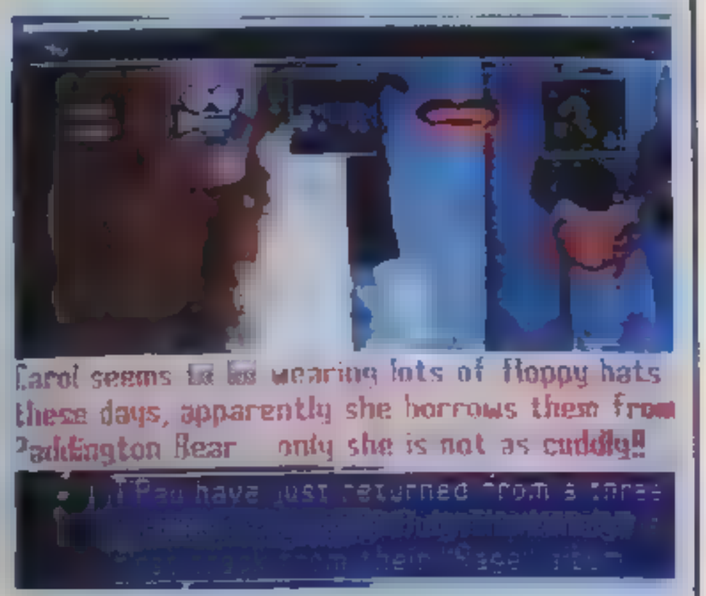
The Chart Show

The Chart Show's facts 'n' figures information icons and boxes are created using Amiga 2000s, broadcast quality genlocks, 10-20 Megs of RAM and custom-designed software – fed through a video mixing desk to produce the finished display. Well I never!
Screen shot taken from *The Chart Show*, © 1989 Video Visuals



Film clips taken from *Return of the Jedi*, © 1983 Lucasfilm

Pro Video Plus ● Character Generation ● Amiga (1Mb of RAM required) ● Around £285 ● Published by PVS, USA ● Available in UK from Amiga Centre Scotland on 031 557 4242

Just one of the many professional video production programs available, *Pro Video Plus* is a character generator with 16 resident fonts, over 48 page and screen transitions and graphics capabilities. A professional program, at a professional price!

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Video Generic Master ● Video Title Generator ● Amiga ● £69.95 ● Published by Kimatek, France ● Distributed ex-stock in UK by HB Marketing on 0895 444433

You need help?

Here are some contact names 'n' numbers if you're new to the Amiga video production scene or even an experienced Amiga video-editor looking for the latest software or hardware...
- Amiga Centre Scotland on 031 557 4242
- Axagrafix on 0279 730020
- Maze Technology on 01 520 9753
- Triangle Television on 01 874 3418

Future Shocks

NewTek – producer of the popular *Digi-View* range of Amiga digitising hardware and software – is currently developing the *Video Toaster*. Out later this year, *Video Toaster* is an exciting combination of high-specification real-time video digitiser, genlock and effects device which should bring the power of professional video production to the average Amiga owner.

Commodore is working on its own deck for the Amiga called *Videobox*, which incorporates genlock, video digitiser, RGB splitter and paint, animation and titling software. Already seen in prototype form at this year's CeBit Computer Fair in Hanover, *Videobox* due out sometime this year.

It looks as though 1989 could be the year Amiga desktop video production becomes a reality.

Video Generic Master is a professional, easy to use video titler allowing standard fonts to be horizontally or vertically scrolled.

✪ ✪ ✪

Video Wipe Master ● Video Wipe Generator ● Amiga ● £69.95 ● Published by Kimatek, France ● Distributed ex-stock in UK by HB Marketing on 0895 444433

Video Wipe Master contains many different wipes and masks but is rather too expensive for what it offers.

✪ ✪

Verdict

All the video production software we've seen falls far short of what we expected. The nearest to an all-round video production system was *VideoStudio* using a Rendale *A8802* genlock, but with *VideoStudio* failings it can be recommended only through the lack of anything superior being commercially available at the price.

It's a sad fact that unless you're prepared to pay loadsacash to setup a decent video production system, the only other alternative at the moment is to create the software yourself...

Chip jibes

• Saint Silicon at work: A pseudo-religion based on puns between computing and religious references. And, er, that's it

The world's newest religion is taking off in America: computer fundamentalism. Its charismatic leader – Saved and Renamed as Saint $ilicon – is touring the States preaching his message. Could it happen here? Basil Pigg investigates...

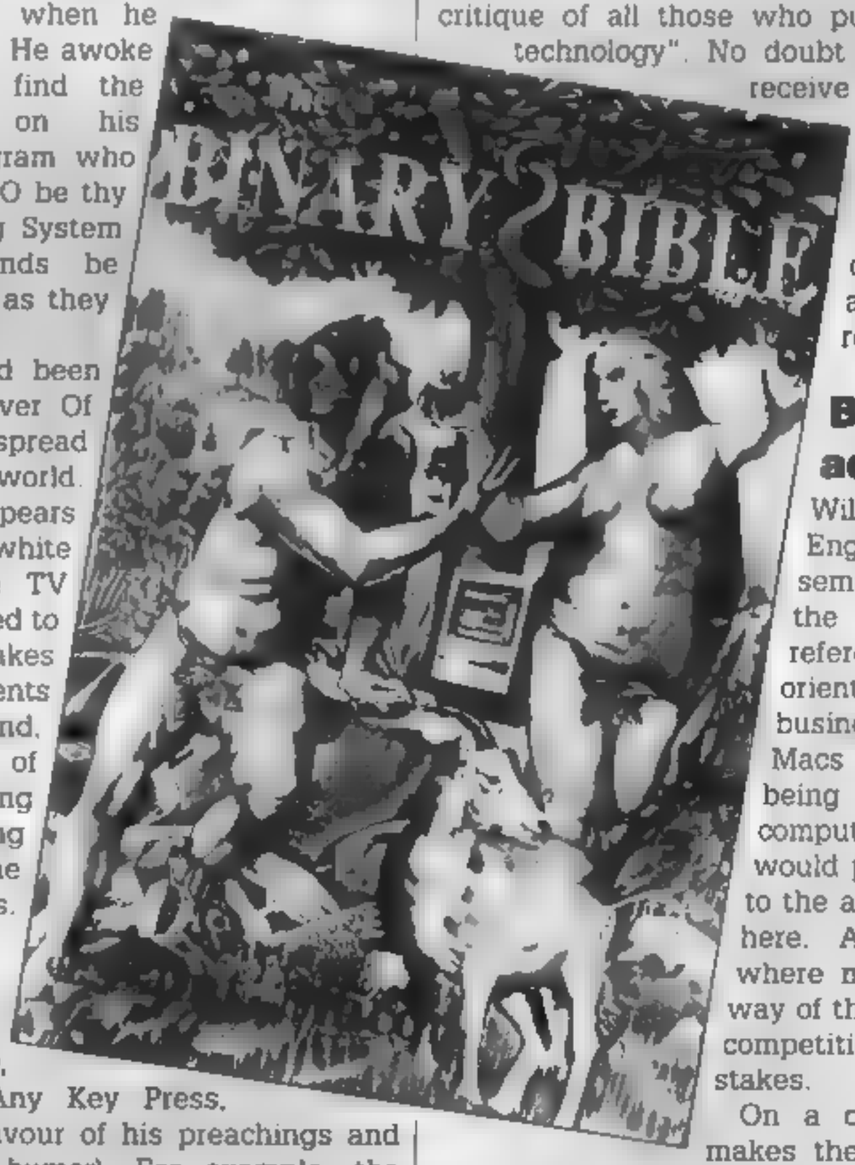
Computing is a fair target for jokes. It forms a vital part of our lives and everyday thinking; it has transformed modern society; and while most adherents are reasonable and affable people, it has its odd few fanatical devotees who take everything far too seriously and who go around spouting nonsense to anyone within earshot. All of which makes it sound like a religion, but you wouldn't joke about *that*. After all, some things are sacred.

In England we tend to keep our religious beliefs to ourselves; although it has a rather lower-key image here than in the States, more people go to church than to football matches every weekend (and bearing in mind the way England are playing at the moment, nothing is going to change much). In America, though, religion is Sold as a Commodity rather more. The antics of these salesmen-like TV preachers cause mirth here, but they take it all so seriously over there, don't they – just like their computing?

Well, over in America, Jeffrey Armstrong is poking fun at those Serious Men in Suits from both the TV Money Churches and the Computer Companies. He has formed the world's first computer religion, the Church of Heuristic Information Processing (this forms the acronym 'CHIP' in case you hadn't worked it out). Known now as Saint $ilicon (the symbol for the American monetary unit is intentional) he tours the country making speeches and presentations, appearing on TV, and writing and promoting his book, *The Binary Bible*. And he's coming to Britain soon, so watch out.

Armstrong was an ordinary American sales and marketing man with no real qualifications or training to speak of (the degrees he holds in Psychology, Philosophy, Literature and History were from American Universities). Rendered obsolete by the computer age, he had a vision on October 31st, 1984, when he became Saint $ilicon. He awoke from a trance to find the keyboard prayer on his computer: 'Our program who art in memory, HELLO be thy name; thy Operating System come, thy Commands be done, on the Printer as they are on the Screen...'

He realised he had been contacted by the Giver Of Data and set forth to spread the word to the world. Saint $ilicon now appears at his meetings in a white suit just like those TV preachers, a chip taped to his forehead. He makes his pronouncements with a disk in hand, possibly reminiscent of Moses descending Mount Sinai holding the tablets with the Ten Commandments. Or maybe not.



Bible bashing

The Binary Bible, published by the Any Key Press, gives an accurate flavour of his preachings and his humour (sorry, *humor*). For example, the opening book, *SysGen*, of *The Beta Testament*, *begins*: 'In the beginning, Giver Of Data generated Silicon and Carbon. And the System was without Architecture and Uninitialised; and Randomness was upon the arrangement of the Matrix... And Giver Of Data saw the Electricity, that it was Logical; and Giver Of Data divided the Ones from the Zeroes...'

But that's not all. There are also nursery rhymes ('Jack and Jill went hexadecimal/ to fetch a file of data...') songs ('Amazing Space/ How sweet it is/ to have a disk like thee/ My files were lost/ And now they're found...') and a list of sayings ('Snug as a bug in an argument').

He has provoked some controversy. A woman in Massachusetts wrote of his radio show Sermon on the Monitor "I think when you have resort to Holy Scripture to make a mockery of God's word, the world must be in a sorry state"; Sister Maureen Driscoll of the Dominican Sisters however said "I thought it not only a marvellous parody of computer technology, but an oblique critique of all those who put all their trust in technology". No doubt in England he will receive letters condemning his frivolous treatment of comms and systems analysis and quibbling with the authenticity of his references.

Britwise addition?

Will CHIP work in England? On a semantic level, many of the computing references are heavily oriented towards business micro jargon and Macs (the Macintosh being the standard home computer over there) and would just not mean much to the average micro owner here. And, a country where mickey-taking is the way of things, he has a lot of competition in the satire stakes.

On a cultural level, what makes the Americans guffaw notorious for leaving the British cold, and vice versa. The thought of a bewildered Sue Lawley or Terry Wogan interviewing Saint $ilicon appealing though. ●

***The Binary Bible* and plenty of further info available from its Virtual Address: The Winchester Cathoderal, 1803 Mission Street #174, Santa Cruz CA 95060 USA**

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ST

Hard drives down

It's about time! Hard drive prices are beginning to tumble. How long have you had to put up with outrageous hard disk prices? Atari set the standard with the introduction of the high cost SH and megafile range. Naturally other manufacturers followed this lead. At last companies are getting wise to the fact that users won't pay inflated prices.

Third Coast Technologies was the first to break the £400 barrier with the introduction of the 20Meg drive. Systems 2000 of Swindon has three new hard drives for the ST: at20 (20Mbytes for £399), at40 (40Mbytes for £499), at70 (70Mbtyes for £899). System 2000 is on 0793 514055.

STs down under

It's always nice to know how the ST is faring in other countires; so I was naturally excited when I got a call from Norman Pierce who supplies PD software in Australia. Recently, Norman told me, Jack Tramiel visited Australia to open the PC show over there. Although the ST has some way to go before it's the number one machine down under, Jack assured show goers that by the following year Atari would take the lead.

The reason Jack is so confident, Norman said, is because of the planned Christmas launch of the TT – the 68030 Unix machine. What is most interesting though, is the price suggested by Jack: around $1,000 (American). At today's exchange rates that's roughly £625 – however, don't expect it to come in at that price as Atari always bump up machine price for the UK. Two versions are planned the TOS-compatible model and the Unix machine. The TOS machine, it is claimed, will run well-behaved ST GEM programs. Atari will certainly be on to a winner if the TT appears at such a low price. Nothing currently on the market offers so much processing power for so little cash. The '030-based Mac SE, for instance, weighs in at around £4000!

Norman estimates that there are between 5000 and 10,000 STs in use in Australia. Compared to the UK (circa 170,000), that's peanuts. A 520 costs $A799 while a 1040 costs $A1,099. Accounting for fluctuating exchange rates, that's virtually identical to prices over here.

If you read last week's column you'll be aware that Tempest is hard ■ work putting together a sub-£300 drive. That's definitely worth looking forward to. The effect of all these low-cost drives suddenly appearing on the market has forced other firms to look closely ■ their product and slice chunks of the price.

Frontier has had to do more than its fair share of price cutting – it just goes to show how much you were being ripped off. The 30Mb Supra drive ■ down to £499 from £599. In time it will be reduced even more.

Ultimately, you will benefit from these price wars; even ■ you have had to pay for it in the past.

Ya wanna win?

You might have noticed ■ plea to Amiga users in last week's news section for innovative uses of Commodore's machine. Well, I can reveal that something very similar will be announced shortly for the ST.

The thought behind this, on the Amiga side, is for owners to submit their ideas on possible uses for the machine to an Amiga magazine. From there the ideas will be channelled ■ Commodore. The entries will eventually be judged ■ the forthcoming Commodore show and ■ yet unspecified hardware prizes handed out to the winners.

Rumours suggest that Database, organiser of the Atari show, will announce something along the same lines for the rapidly-approaching June 23rd to 25th show. Keep watching this space.

Coming soon

NeoDesk and *MaxPak* are a couple of American utilities that might make it ■ our shores soon. At the moment the US software houses responsible for the programs are looking for a UK distributor.

Gribnif's *NeoDesk* replaces the control panel provided on the language disk. Along with all the facilities offered by the Atri controlo panel, *NeoDesk* provides functions for switching on or off a clock that sits at the top right of the screen, a screen saver, blitter toggle and keyboard repeat rate.

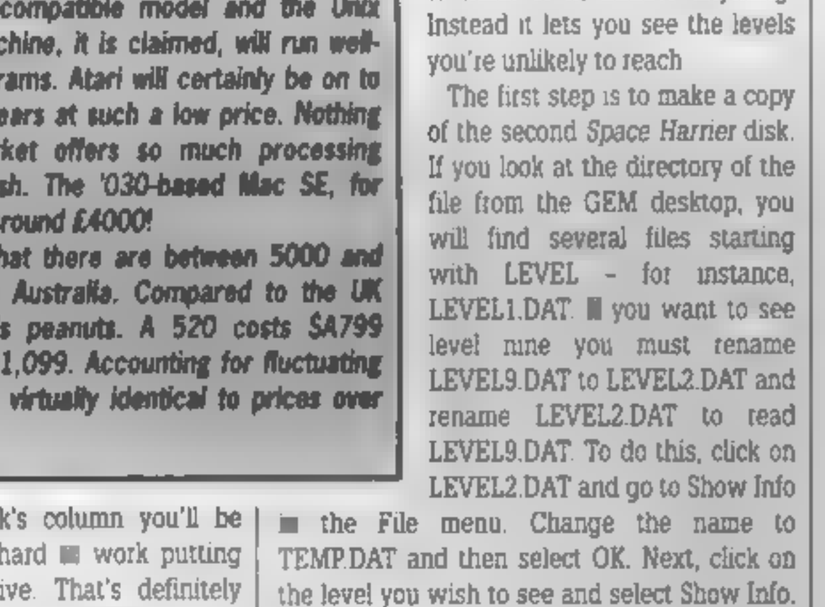
MaxPak ■ a collection of utilities including RAM disk, printer spooler, clock with alarm option, Espson FX-80 printer driver and so on.

No price or availability date yet.

See all of Space Harrier

It's unlikely you'll ever finish Elite's *Space Harrier*, so why not try a little underhand help. This hack doesn't give you infinite lives or infinite energy or, come to think of it, infinite anything. Instead it lets you see the levels you're unlikely to reach.

The first step is to make a copy of the second *Space Harrier* disk. If you look at the directory of the file from the GEM desktop, you will find several files starting with LEVEL – for instance, LEVEL1.DAT. ■ you want to see level nine you must rename LEVEL9.DAT to LEVEL2.DAT and rename LEVEL2.DAT to read LEVEL9.DAT. To do this, click on LEVEL2.DAT and go to Show Info ■ the File menu. Change the name to TEMP.DAT and then select OK. Next, click on the level you wish to see and select Show Info. Change the name to read LEVEL2.DAT and select OK. Now ■ back and rename TEMP.DAT to LEVEL9.DAT.



Load the game as usual – use the copied disk as disk two – and complete the first level. It's not that hard. After the first level you will be whisked to the level you renamed as level 2.

Adrion McHerriot

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PC UPDATE

Courage in both hands

At the risk of sounding as if I was born with a wodge in my hand, I've been considering buying a laptop portable, recently. This is mainly so I can work easily away from home, on trains and the like (often to finish off a *PC Update* on time!). One thing that would still be handy, though, is to be able to run a 5.25" drive with it, as a lot of the software I use - like submissions to the *PC PLUS SuperDisk* - is provided on 5.25" disk.

It just so happens I have a 5.25" drive which has already served me well on a BBC Micro and an Amstrad 6128, and should work just as well with a PC. When I dug it out the other day, I found to my horror that the internal power supply had died, was no more and was sitting on the bottom of the cage waving its legs in the air. The original supplier wanted a cool £50 to replace it, so dredging up memories of electronic equipment I had built in my youth, and armed with one of the few Sinclair Electronics digital multimeters ever sold, I sat down to investigate.

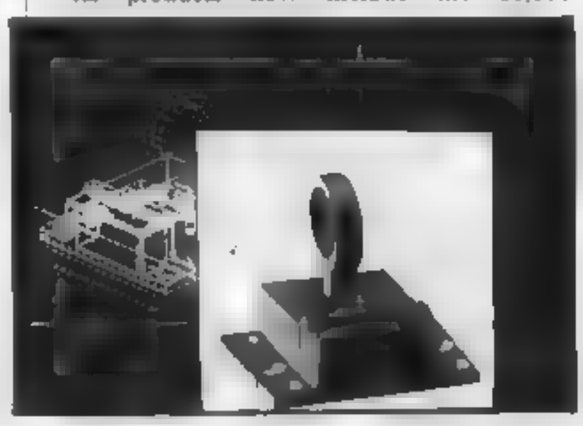
You won't want to hear the gory details, but the meter assured me that one of the primary windings had gone open circuit (meaning that the wire wound round the transformer was broken somewhere). From past experience, this usually happens at the point it is soldered onto the transformer's terminals. I was lucky, this was the case. Soldering in a short length of cable reinstated the winding, and reassembling the power supply had the disk drive up and running again. Cost: two hours of my time - still worth, sadly, considerably less than £50.

The moral of this little yarn is that if you have any feel for electronics, it's worth making at least preliminary investigations before bundling a piece of computer equipment off to the repair crew, who in some cases will do a complete swap-out and charge you through the nose for doing it.

Drawing the line

Autodesk recently had an expo all of its own. This in itself is quite surprising for a company that specialises in software. When you realise that the software is CAD, it's perhaps even more noteworthy. Autodesk, of course, produces the market-leading *AutoCAD* software, which computerises most aspects of technical drawing.

Its products now include the £3,300 *AutoSolid*, which ray-traces solid views from 3D isometric drawings, and like other Autodesk products is available on 386-based PCs. The company has also introduced a compiler for the Lisp language incorporated into its products, which can give a sixfold speed increase to programs written with it. The third major release is *ABASE*, a parametric database which can store details of components from which assemblies can be called together.



The last of these three products has an exciting heritage, as it is a joint venture between Autodesk and Parallel, a soviet cooperative based in Moscow. It's particularly interesting because it means that Russian software is starting to come out of the West, and that that software can be of a very high standard. What started with *Tetris* could end with some very useful Sputnik-control packages!

How to lose readers...

While driving home the other day, avoiding the *Clapped Out Mk 3 Cortina Users' Group* Easter jaunt, I set to wondering what an equivalent derogatory model of PC would be. Like Jasper Carrot's *Sun Readers*, do we start looking down our noses at *PC1512 Users*, who still run under DOS Plus and think that an unfriendly command when BASIC 2 asks them to press [F9] to run a program.

Or perhaps it's BBC Micro owners who were too stingy to buy a PC and added a 80186 second processor to their Beeb and now keep complaining that *Lotus 1-2-3* runs very slowly. Any other suggestions (which don't involve big-headed *Express* Columnists) on a postcard, please, to **PC Update, New Computer Express, 4 Queen Street, Bath BA1 1EJ.**

...in two easy lessons

Talking of postcards, nobody ever writes. How can I get a meaningful dialogue going, when the only letters I get are written by the M.D. in my wife's name? All correspondence to the address above, please.

Simon Williams

BAT fruit

Further into the depths of the MS-DOS 3.3 user manual, I came across the CALL keyword in the section on batch processing.

Under normal circumstances, when you call a batch file from within another batch file, the second batch file will return to the DOS prompt when it finishes, rather than returning to the place from which it was called in the first one. You can specifically direct program flow back to the first batch file, though, by using the CALL command to start the second batch. Here's an example:

```
First batch file - call it EXAMPLE1.BAT
echo off
echo This is a sample batch file
echo called EXAMPLE1.BAT. All it
echo does is to start a second
echo batch file, EXAMPLE2.BAT.
EXAMPLE2
echo You won't be able to read
echo this part unless the line
echo above reads CALL EXAMPLE2.

Second batch file - call it EXAMPLE2.BAT
echo
echo This is a second batch file
echo called EXAMPLE2.BAT. You'll
echo always be able to read it.
echo
```

Try creating the two batch files EXAMPLE1.BAT and EXAMPLE2.BAT using EDLIN, RPED or any text editor which can produce ASCII files. Run EXAMPLE1 and note that the last three lines of it are never seen. Now insert the word CALL in front of EXAMPLE2 in line five of the first batch file. Run it again and note the difference.

AMIGA BLIT

Try Before You Buy

Buying software on the Amiga can be a risky business, to say the least. Many software packages, often retailing above £100, may appear to be precisely what you require when you see screen shots and advertisements. However, when you finally take the plunge and hand over the hard-earned cash, all too often you can end up disappointed with a sub-standard program.

currency, but unfortunately, unless you live near one of the few specialist Amiga stores in this country, chances are the salesperson will know as much about the Amiga as an armadillo.

The latest solution ■ this age-old problem is the brainchild of those nice chaps ■ George Thomson Services. You've probably already heard of GTS' extensive range of PD disks, but this latest library ■ a little different from the norm as it comprises entirely working demos of commercial software. The TBYB collection (short for Try Before You Buy) currently consists of twenty disks which include demos of software such as DR.T's *MRS* and *KCS 1.6*, *M, Dungeon Master*, *Deluxe Print 2* and others.

Tony Thomson of GTS hopes that this new library will not only benefit the end user, but the industry as a whole. He reckons that removing the risk from buying software may go some way to cut down on the high level on software piracy. GTS can be contacted on 077082 234.

Keep the Wolf from the door

Are you pinned down under heavy enemy fire in Ocean's Amiga conversion of the highly regarded arcade game Operation Wolf? If so, here's a nifty little cheat program sent in by Roy Tharle of Littlehampton, in West Sussex.

Type the program below into either AmigaBASIC or HiSoft BASIC, save it to disk, insert your Operation Wolf disk 1 into the internal drive and then run the program. Once the program has finished, reset your machine with the Operation Wolf disk still in drive df0:.

```
check = 0
cheat = 520192&
FOR n = cheat TO 520314& STEP 2
  READ a$
  a = VAL("&h"+a$)
  check = check + a
  POKEW n,a
NEXT n
IF check <> 5737366 THEN
  PRINT "Error in DATA"
  END
END IF
CALL cheat
END

DATA 41FA, 001E, 227C, 0007
DATA FF50, 303C, 0019, 22D8
DATA 51C8, FFFC, 23FC, 0007
DATA FF50, 0000, 0068, 4E75
DATA 48E7, C006, 4EFA, 0022
DATA 2D4D, 002E, 4EEE, 0022
DATA 7016, D25D, 51C8, FFFC
DATA 4641, 3D41, 0052, 4CDF
DATA 6003, 4E73, 4E71, 4E71
DATA 48E7, 0006, 2C79, 0000
DATA 0004, 42AE, 002E, 4EFA
DATA 000E, 23CD, 0000, 0068
DATA 4CDF, 6000, 4E75, 33FC
DATA 0014, 0003, 6F58, 33FC
DATA 0014, 0003, 6F56, 4EF9
DATA 00FC, 0CA6
```

What therefore can be done to safeguard yourself against such a disaster? Until now, not a great deal matey; you pays your money and takes ya chances, it was as simple as that!

One possible solution is of course to visit your local Amiga store and ask for a demonstration before handing over any

Epyx Amiga Portable Latest

Regular readers of *AmigaBLIT* may remember a story featured about a month ago concerning a supposed Amiga-compatible games machine that was being developed by Epyx ■ the States. Latest news suggests that in actual fact the story was complete codswallop and we were ■ being led up the garden path! Oh well, it was nice while it lasted. Won't someone (Commodore?) please develop a portable Amiga!

Not a lot of people know that...

How much do you think you know about our beloved machine? Well, why not test your knowledge with the following little quiz. If you get them all right then you are truly of higher intellect and deserve to own an Amiga, but if you get less than half right then you should sell your Amiga straight away and join those Atari-owning fools.

All you have to do is to answer either TRUE or FALSE ■ the following questions. Answers are ■ the bottom of the page (but no cheating matey!).

1. The word Amiga is actually Spanish for Female Friend.
2. The Amiga was originally called Lorraine.
3. The Amiga's custom graphics chip is called Daphne.
4. The name given ■ the Commodore Logo by CBM staff ■ the Chicken Head.
5. The highest non-overscan screen resolution on a European Amiga is 640x400 pixels.
6. Atari helped pay for the development of the Amiga.
7. The Amiga A2500 uses a 68030 processor. ■ AmigaDOS ■ a joy to program.

Snippets...

- US Gold have split with the german software house that brought you Denaris, Rainbow Arts. Who will take over the UK distribution of Rainbow Arts games is unknown.
- The release of the next *Kickstart* upgrade, version 1.4 (please don't ask me for a release date!), will also see the release of completely revamped ROM Kernel manuals from Addison Wesley.

Quiz Answers

I hope you aren't peeking! Anyway, prove yourself worthy of the title of Amiga Owner by comparing your answers with the following:

1.TRUE 2.TRUE 3.FALSE 4.TRUE 5.FALSE 6.TRUE 7.FALSE 8.FALSE

Jason Holborn

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SPEX

Art to please

I'm glad ■ see an old favourite of mine ■ available once again, and with a healthy £2 lopped off its price into the bargain. OCP's *The Art Studio* first saw the green light of public money way back in 1986, thanks to a marketing deal with Rainbird.

This menu-driven art package is getting on a bit now, but for comrades who've recently joined the glorious Speccy revolution, it's well worth exchanging some of the folding stuff for, especially in such a games-oriented market.

If I was being really picky I'd have to plump for *Artist 2* as my own personal choice of Spectrum art utility, but it is probably a matter of opinion.

The Art Studio was an excellent attempt to create a professional-looking and user-friendly art program on our machine, and even today it's easy and enjoyable to use. The new reduced price of £12.95 ■ probably not cheap enough for an O.A.P. package like this, but all in all I still recommend it to any art utility-less individual.

The program's big brother – *The Advanced Art Studio* – has also been refloated. This was a largely rewritten and improved version specifically for 128K owners, and originally cost twice as much, which is why the reduced price of £22.95 doesn't sound quite such good value for! money. Arty-fartys contact EEC on 0753 888866.

Budget bargain

That classic cheapo *Rebelstar*, much loved by Spectrum-owning onsomniacs, has finally been followed up. *Rebelstar II*, it's imaginatively called, and I think I need treatment for severe addiction already.

The game looks and plays similarly to the author's other great strategy outing *Laser Squad* – another piece of software which should have carried a Government Health Warning from the department of dangerous addictions.

Control is simple but effective, like the original, and the graphics are detailed, large and on the whole a lot more interesting than the hexagon-shaped blobs usually found in wargames. For a strategic type affair it's also fast and exciting. You'll spill your Ovaltine trying to fend off the Rik Haynes lookalike Alien Commandos, I can tell you.

To sum up: the best budget release so far this year, a contender for *Insomniac International* magazine's Game of the Decade and worth buying even if ■ shoot-'em-up is all you can manage normally.

Also included in the £1.99 price is a special two-player version. Now you'd have to be particularly unreasonable to want more.

Come back Bob!

Dismayed at the apparent loss of *Bob's Full House* from Domark? Well never fear, Domark has got some impressive-sounding releases ready to fill the void left by that lovable star. Namely, a collection of Atari coin-op licences including *Vindicators*, *APB* and *Toobin'*. The aim ■ the latter is to guide your rubber inner tube down treacherous rapids. What do you mean you'd rather have Bob?

How much?

If there's one thing guaranteed to turn a docile, pacifist +3-owning hippie into a seething ball of hate it's the price of disk software. For that reason, I suggest any +3ers in the audience sit down, slip into ■ straitjacket if possible and compose themselves for a shock. UbiSoft's latest, *Iron Lord*, will set you back £19.99! That's a whopping great £7 more than the cassette version! £19.99! That's as much as 16-bit people pay for some of their software. Downright disgusting, I call it. Someone ■ UbiSoft explain immediately, or prepare to go into hiding.

Plug? Me?

Normally, I wouldn't dream of being so unprofessional as to actually plug something I'm not involved in, but I am afraid the latest issue of the longest-surviving and best Spectrum fanzine has just come out and deserves ■ mention. Not because my friend runs it and promised me a handsome cash reward, or even because I write for it. No, *Spectacular* gets plugged because it is the first publication I've seen which has been desktop published on the Speccy.

Using PCG's suite of DTP programs, as mentioned several issues ago, the result is very impressive, with lots of varied typefaces and column widths. The talented Ed has managed to incorporate screen shots and other graphics excellently, without a join in sight.

There are a few cock-ups, but overall it shows the potential of the product effectively. For your copy, send the too-small sum of 25p and SAE to **Richard Pelley, 32 Abbey Road, Westbury-on-Trim, Bristol BS9 3QW.**

Robin Alway

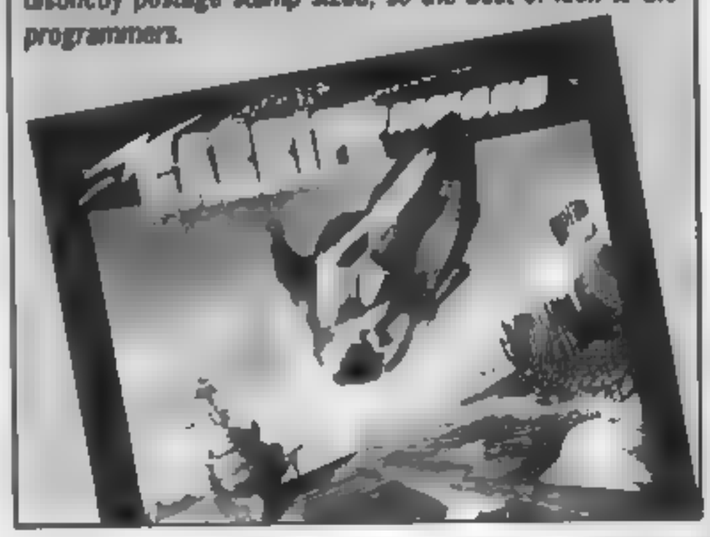
Size does matter

In columns past I've suggested a number of times that the Spectrum software scene needs some games written specifically to take advantage of the extra memory available on the 128K Spectrums, +2s and +3s. A lot of you think the same, if the letters I've received are anything to go by.

Well, it's time for merriment all round as, approaching at warp factor 10, just for people with large memories, is the much-acclaimed, graphically amazing and all-round jaw opener Carrier Command.

Latest news is that the planned 48K version has been scrapped, which is hardly surprising with such a complex game. Carrier Command will appear on disk and cassette for Spectrums with 128K, and it looks incredible. If everything goes to plan, it will probably be the biggest enticement to but a +2 or +3 so far.

People with smaller ones (memories, that is) need not despair, though, because Ocean is currently attempting to shoehorn its massive arcade adventure Where Time Stood Still into 48K. The playing area of this prehistoric romp made everything done on the Spectrum before look distinctly postage stamp sized, so the best of luck to the programmers.

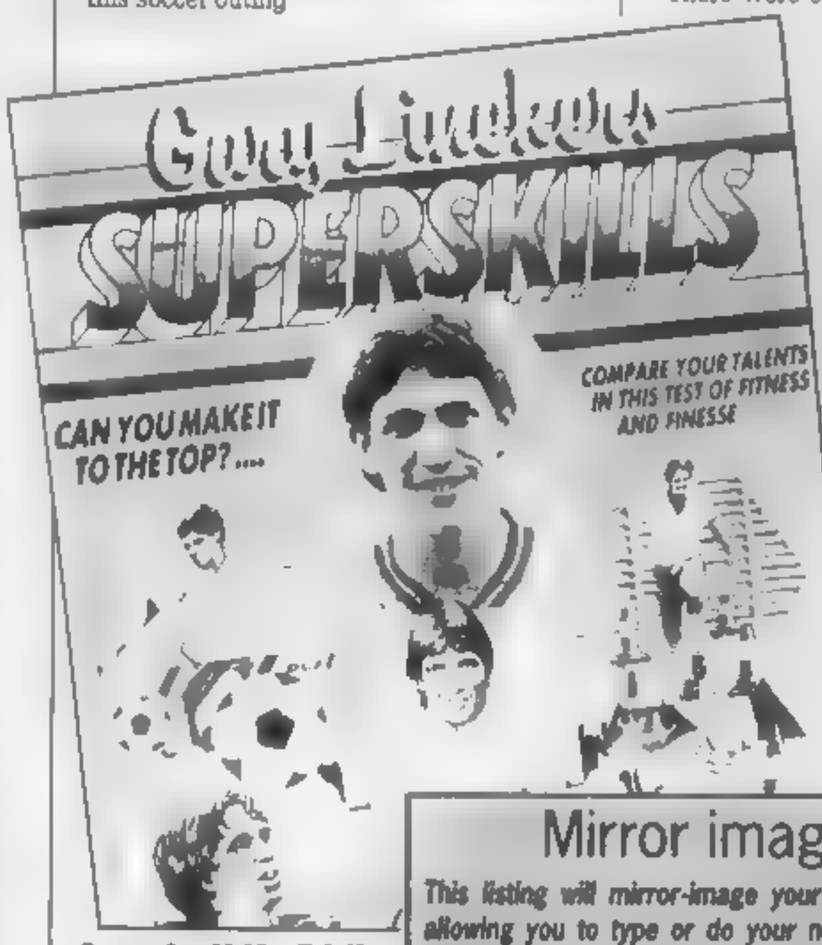


SECTOR 64 SECTOR

New Releases

DNA Warrior • £9.99 • Artronic
The game features extra weapons pods to enhance your firepower. The attack patterns aren't terribly realistic, but it should appeal to shoot-'em-up fans.

Gary Lineker • £9.99 • Gremlin
The Barcelona star makes his C64 debut in this soccer outing



Soccer Q • £2.99 • ■ & H Games

Street Cred Football • Premier • £2.99
Coming up soon is this game where you and your chums can get together for a bit ■ footy down at your local garages with no rules and a rush goalie (bring back any memories).

Demo scene

We were just browsing through the mail here in the office when we came across a disk which contained roughly 30 demos, which had been linked together for judging (it's that time of yearwhen all the great demo teams in Europe get together for the yearly continental demo competition).

By painstakingly loading each one up, we found that the demos had come from Holland, England, Germany, Denmark, Sweden and Finland.

These demos contained work which could have been turned into money if the writers had turned their talents to games writing. Each demo on the disk was special in its own way, featuring juicy colours and breathtaking effects with sprites and raster-splitting. One demo had a 3D floor in the bottom and side borders, along with a decently drawn logo swaying with super smooth intertia over 6 chars while have 32 dots forming nicely calculated images.

There were so many great demos that we found it impossible to agree on which we liked best. All the demos are completely public domain, and were organised by ordinary programmers.

There is so much happening all the time in the demos scene with styles and ideas that your demo is out of date in a flash

When it ■ started, ■ was with pictures with scroller That has led to picture with scroller plus sprites moving about, which has now led ■ demos with side border pictures with scroller and moving screen...

Mirror image listing

This listing will mirror-image your screen upside down while allowing you to type or do your normal BASIC program. The code transfers data at 1024 and places it from the bottom up at 33792. Simple, eh!

```
5   B=49152:FORL=0TO77:READA:POKEB+L,A:NEXTL:SYS49216
10  DATA 169,0,133,254,169,132
20  DATA 133,255,169,192,133,250
30  DATA 169,7,133,251,169,1
40  DATA 141,0,221,162,0,160
50  DATA 0,177,250,145,254,200
■■  DATA 192,40,208,247,165,250
70  DATA 56,233,40,133,250,176
■■  DATA 2,198,251,165,254,24
■■  DATA 105,40,133,254,144,2
100 DATA 230,255,232,224,25,208
110 DATA 218,76,49,234,120,169
120 DATA 192,141,21,3,169,0
130 DATA 141,20,3,88,96,0
200 POKE53280,0:POKE53281,0
210 PRINT"[CLR/HOME] LOOK, I'M UPSIDE DOWN"
220 PRINT"[CURSOR DOWN] TRY TYPING YOURSELF":LIST
```

We're not humble

What makes us 64 owners mad is when you read an article in a magazine along the following lines:

"...blah, blah, blah...has just been converted from the humble 8-bits to the 16-bits."

Many 8-bit games are far superior to 16-bit efforts. Indeed, 16-bit games at the moment often have worse gameplay and much more jerky movement than the C64 offers.

The only superior aspect of the 16-bits is sound (which is cheating, because it's sampled and the C64 can do it) and graphics. Almost every game published on the C64 is fast and smooth, whereas on the ST and Amiga they are slow and jerky. The Amiga has no excuse having jerky scrolling, as large amounts of memory could be scrolled with the copper (co-processor) if done correctly. So in our opinion, the 8-bits are not humble - blame instead the computer which have the power to be superior and are not taking advantage of it.

Programmers may think that they have pushed the 64 to its limits, but we doubt it. Not just yet!

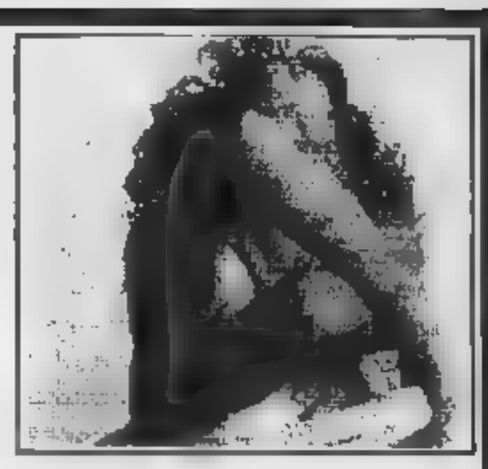
All demos can be obtained from a decent PD library, and many listings we have supplied in back issues of *New Computer Express* are examples of the routines that people use.

Mailbox

If you have any questions which you would like answered or comments you would like to make, then send your mail to **Sector 64, New Computer Express, 4 Queen Street, Bath BA1 1EJ.**

Ian + Mic

AXAGRAFIX



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PCW PATCH

Light program

The PCW is an ideal machine for programming. Nice big high-definition screen, lots of special keys you can assign functions to in your programs, printer that can whack out your listings for you to mull over in bed... the Z80 chip isn't as slow as other machine owners would have you believe either.

Most of us start dabbling with the excellent *Mallard BASIC* supplied free with the PCW. If your appetite has been whetted by that, move to a compiled language. With this you write your 'listing' as a text file – using *LocoScript* or *Protext* for example – and then run a program which translates that text file into a series of numbers – machine code. This file ends in .COM and can be run, just like *PIP* and *DISCKIT* and so on, by typing the first eight letters of the name you gave it. Such programs run miles faster than BASIC and you can sell the .COM file as a commercial stand-alone package if you wish.

There are millions of 'compiled' languages like this; C is currently popular but Pascal is easier for the BASIC convert. HiSoft (0525 718181) does nice versions of either language for forty quid or so but you'll have to get an introductory book on the language too – in abundance in your local bookshop.

Nail those files

Here's how to make a *Protext* file containing the names of the files on a disc. Type SPON then press |f1| twice; finish with SPOFF. A file called CAT has now been created with the directory listing. Load and edit it, removing the junk at the top and bottom and using EXCH (replace) to remove the file sizes and spurious spaces (show them with |ALT|S) and finally to rearrange the file so one name appears on each line (replace an appropriate number of spaces with !. for a RETURN).

■ why is this so useful? Watch for the next instalment in the how-to-build-a-free-text-database story...

Office job

Mini Office 2 (plus spell checker and thesaurus) will ■ another two weeks due to last-minute programming problems. Detailed review when ■ eventually appears!

Basil Pigg

WIMPs

Read the article on page 21 of this Express. Wouldn't it have been nice to have had WIMPs for the PCW?

Well, there are. Kempston's Jeeves provides a WIMP environment (and a lot of desktop functions like calculators and notepads) but WIMPs haven't proved very successful. One, LocoScript provides a nice cosy environment for you, avoiding any use of CP/M; two, the processing power needed to handle all those graphics is really too much for the Z80, and the WIMP works shakily and none too quickly; three, Jeeves costs £79.95. Details on 0908 677 888.

QL corner

Yet another DOS emulator!

Schön, well known for ■ replacement keyboards for the QL, recently announced that ■ is also working on a DOS emulator. That will make three of the things.

SuperBASIC programming tip

If you are fed up with constantly typing **"DELETE mdvl_fred_bas"** and **"SAVE mdvl_fred_bas"** when developing a *SuperBASIC* program, add the following line to the end of the program (all one line):

DEF PROC ■ DELETE
mdvl_fred_bas: SAVE
mdvl_fred_bas

You merely type 's' ■ frequent intervals ■ save the program.

Quanta software library

One good reason for joining *Quanta* is its massive library of (mostly) free software. It currently stands at 22 disks, withprograms ranging from utilities such as the *Micro Emacs* programmer's text editor to games like *The Worm*, a text-based adventure program. ■ programs submitted for inclusion in the library are vetted, so they should ■ reasonably bug-free. I'll mention some of the more interesting programs from time to time. One that recently received ■ favourable mention in the group's newsletter is *Quill Driver*. This modifies *Quill* so that it can use ten different versions of printer_dat - printer£0_dat, printer£1_dat etc.

QL comms

Now that several computerised bulletin boards of interest to QL users are on-line (list next week), details of relevant hardware and software might be of interest.

Miracle Systems' modem (1200/75 baud only) is by far the cheapest way to increase BT's profits: it costs a mere £45 with software. It is not BT approved, however.

Also available from Miracle is a £39 device called the Modapter, which allows you to use the QL with a standard (non-intelligent) modem. The QL has funny handshaking, and losed characters on input if connected directly to an ordinary modem.

QL to PC file transfer

If you need to transfer files between your QL and a PC, there are basically two ways to go about it. The obvious technique is to connect the serial ports together with an appropriate lead and transfer the files directly.

If you have disks on the QL, which are similar to those on the PC, files may be transferred using a piece of software such as DP's Media Manager or PDQL's DiscOVER.

Virtually any intelligent modem (one with a built-in microprocessor) should work with the QL. I can recommend the Astracom, which costs £175 (300, 1200/75 baud) or £273 (300, 1200/75, 1200/1200 baud). It ■ Hayes-compatible, so you can also use ■ with standard software on a PC.

John Torofex

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BEEB BOX

Grommet upgrade

As a committed BBC user ("*ought* to be committed", I hear you say), I never tire of arguing with other computer owners about our respective machines. A little light-hearted competition is fun and, so long as it never develops into fisticuffs, instructive.

For example, I stoutly promoted the sheer strength of the BBC keyboard against a couple of Amstradites the other day.

Although it's true that BBC keyboards are almost indestructible, comparing well with the venerable Apple II; one area of weakness remains, however. The two keyboard mounting holes tend to split on the computer side, especially if you have graduated from a manual typewriter and like to bash the keys. The solution involves finding a slightly oversize set of nuts and bolts for the keyboard, and two thin rubber grommets. You then re-mount the keyboard with the two grommets between the keyboard and the computer. Tighten them up with your fingers, and potential problems should be avoided. Incidentally the grommets have to be thin, as otherwise the keyboard will not fit correctly under the case.

Now finish this sen...

Predictype is one of those curiosities you occasionally encounter. A solution looking for a problem, you might say.

However, there is a little bit more to this program than at first meets the eye. It is a memory-resident program for starters, and there are few enough of those on the BEEB. Second, it uses artificial intelligence techniques.

What it does is speed up your typing by suggesting a list of words as you begin to type them. You select from a list of five, and so on. The clever bit is that it remembers the most common words, and so as you type a higher and higher rate is obtained. You then save your words with the sideways RAM image, so the next time you start up with your personal word list.

View, *Wordwise+* and all common word processors are supported.

Target group for this product is kids with learning difficulties, so you probably won't see this program around in the shops.

Andrew Brown

Games Archie?

Current hot rumours in the Acorn camp suggest there will be a games-oriented Archimedes maybe later this year. Obviously, such a machine should wipe the floor with the Amiga & Atari ST if it is marketed properly.

Those with long memories will recall, however, that marketing is a skill that Acorn have never really mastered. Witness the Electron debacle, where a potentially excellent machine was crippled by the lack of proper market research. The result? Vital features such as mode 7 and a printer interface were missing from the machine, and it never made it.

MSX TDA

Hard cheese

I have come across a problem with the Neos *Mouse and Cheese* software and my Toshiba printer. Although the software gives you the option to dump the screen to the MSX printer, I have been unable to print anything but garbage. This is in spite of trying various printer control codes. If anyone has written a routine to make this software compatible with my printer, I would very much like to hear from them.

Merry poppings

I've just spent a few frantic hours playing *King and Balloon*, a £2.99 game from Bug Byte. You may remember seeing this game several years ago, as it was quite popular in pubs and arcades.

You control a guard, who patrols some battlements protecting the Frog King wandering about beneath you from a load of balloons at the top of the screen. The balloons swoop down and try to fly away with the king, and your job is to shoot them down before they reach him. You get another chance to hit the balloon as it carries the king away, but if you miss this time as well then you lose a life.

The game has been perfectly captured, with good colour (which is more than you can say for some recent releases), music and sound effects. A giveaway at £2.99.

Something wonderful...

Watch out, watch out, there's a virus about – and it could be heading your way. The first "virus" has hit the MSX system. David Webb of MSX Link is the person who have me this bad news, and he should know – it has invaded his system and corrupted several of his disks. All his write-protected disks are, however, OK.

With this virus, when you type in "Files" the letters on-screen fall to the bottom. Look out then for a screen full of "V"s and the caption "You've got me".

Every time David loads a disk, the name "VIRUS" still appears on-screen, even though he has tried to do a system reset. MSX 2s are battery backed up, and short of dismantling his computer and removing the battery, he can find no way of shifting this "bug". He has found a way of reseting all his initial parameters, e.g. printer type, clock settings etc, by shorting out his RS232 to ground (I don't recommend this, but it cleared his system partially), but the virus still appears to be lurking somewhere. If anyone out there has any ideas, or even a virus-killer for the MSX, please write in before this thing gets a hold on our format.

Protection racket

Here is a tip for those of you who wish to protect your own programs but don't want to resort to the lengthy ON STOP, STOP ON routine etc. Just add the following to your program:

```
10 REM PROTECTION ON
20 POKE 64443,1
30 POKE &HFF89,199
40 END
```

This will prevent your program being "listed".

Keith Neal

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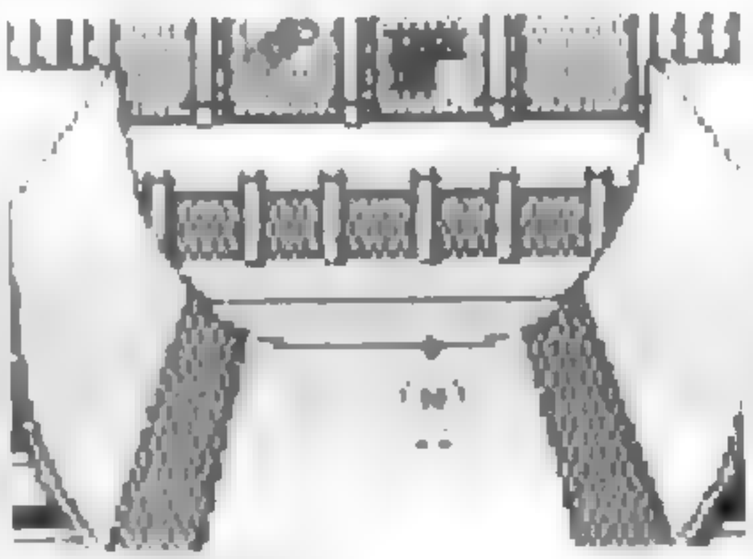
SOD the game

Those charming people from Electronic Arts dropped ■ last week (I think they were on their way somewhere else actually, but since that doesn't give quite the self-important impression I'm after I won't mention the fact - oh what a giveaway!). They had an early version of *Skate or Die* ■ show me, and naturally I didn't refuse.

• "Coming soon," he's saying, "Skate or Die - from EA!"



• How the hell do I get back up?

And I have to say it's looking pretty good. You never can tell at this stage what the finished game ■ going to look like, since so much depends on final adjustments ■ gameplay, smoothness of scrolling, sound effects (very important in my view) and ■ on, but from what I've seen they seem to have done a very good conversion. In fact they're literally down to bytes of available memory.

As its name indicates, it's a skateboarding sim (not my scene really, I was more into those plastic balls on string that you bounced against each other, Kannockers I think they were called – you haven't the foggiest notion what I'm talking about, have you?), and includes downhill and alleyway racing, together with the ramp and the pool.

I have to confess I don't really get all the skateboarding in-jokes, but it looks great fun. The finished version should ■ appearing in the next few weeks, at which time you shall have my considered opinion as to whether Kevin and the gang have polished the game to the usual high EA standard.

Now that's magick!

Francis Dickinson of Bristol wrote me a begging letter last week that I just couldn't refuse. For a start, he wasn't asking for money, and secondly, I knew how ■ help. "I've been stuck on that old classic *Heavy on the Magick* for positively ages," he says: "can you ■ your wonderful readers (fawn fawn, cringe cringe) help at all?"

But of course! Right then, where do we begin? Ah yes, doors, which are opened with keys, gold or a password. If there's a table near the door you need a key; if there's a table and a double-O sign then gold will do the job; and pillars with skulls ■ wolves' heads demand a password.

Rooms that need keys have names like "Room of Pride" and "Room of Claws," matching star signs found next to the keys. Leo the lion matches the "Room of Pride" and Cancer the Crab matches the "Room of Claws."

Elementals can be a real problem, because they block progress or guard useful objects. But to get your hands on an object you've got to have a replacement for it: ■ obtain the pellet you must swap it for a ball; the egg needs a shell in its place, and a nugget demands a nougat.

If you're stuck getting past the fire you must carry the salamander clasp, and to pass the hydra you must have the snake clasp. Most monsters can be dealt with by blasting, but other, larger, ones require an object to kill them. Use the mirror on Medusa, the pellet on the slug, the slat on the cyclops, the garlic on the vampire and the nugget on the werewolf. If you run into them without the right object the only way past ■ to transfuse till you have ■ stamina points and then continually freeze them.

Hope that helps a little, Francis! (Thanks by the way to *Heavy on the Magick* expert Mike Kennard.)

Joystick jury

If you're considering splashing out on a replacement joystick – don't! Well, at least not until you've seen the May issue of *Amstrad Action* (available from all good newsagents on 13th April – hell, they do blatant plugs on Wogan, why not here too?). In it we put to the test no fewer than 27 (count 'em) sticks and come up with the best bargain buy; the best under a tenner and under £15; and the "World Beater." And the winners in each category are: (oh dear, no room. You'll just have to buy *A A* instead).

Steve Carey

And I have to say it's looking pretty good. You never can tell at this stage what the finished game ■ going to look like, since so much depends on final adjustments ■ gameplay, smoothness of scrolling, sound effects (very important in my view) and ■ on, but from what I've seen they seem to have done a very good conversion. In fact they're literally down to bytes of available memory.

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I have to confess I don't really get all the skateboarding in-jokes, but it looks great fun. The finished version should ■ appearing in the next few weeks, at which time you shall have my considered opinion as to whether Kevin and the gang have polished the game to the usual high EA standard.

Music to his ears

I had a long, highly articulate and indignant letter this week from Rob Baxter. To my relief, his indignation wasn't aimed at me, but at Rainbird for dropping the Advanced Music System. "In my opinion," Rob goes on, "it's the most wonderful bit of coding ever to appear for the CPC."

But Rob believes in a life hereafter for AMS, and shares my hope that some enterprising company will snap up the rights. In the meantime, he would like users of the program to know that he's prepared four demo disks of extremely high quality music, mainly of the classical variety. Connect your CPC up to a stereo system (a cinch to do, by the way) and the output, claims Rob, is "truly astonishing!"

Rob's been able to do things not mentioned in the manual, such as the dreaded Triplets, and other items such as rubato and both Accelerandos and Rallentandos. Sounds well pervy to me, but musos will no doubt be highly impressed.

Interested? Send Rob an SAE: Rob Baxter, 50 Milton Grove, Whalley Range, Manchester M16 OBP.

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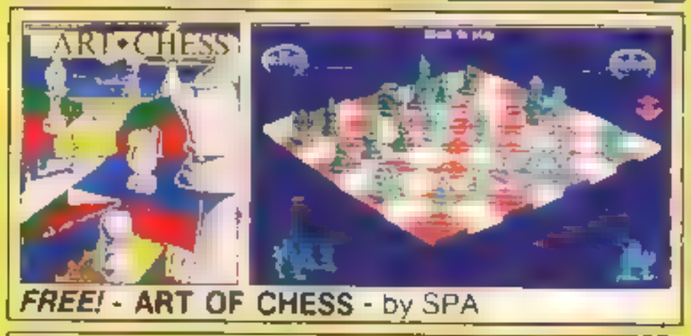

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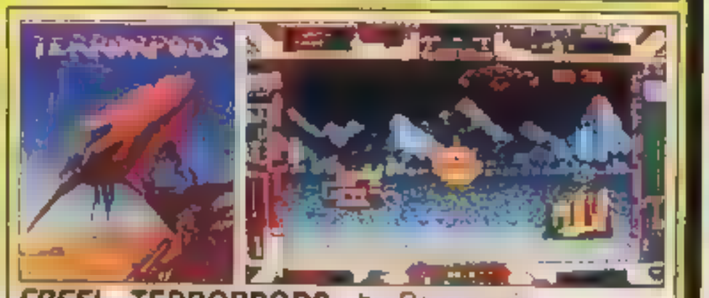

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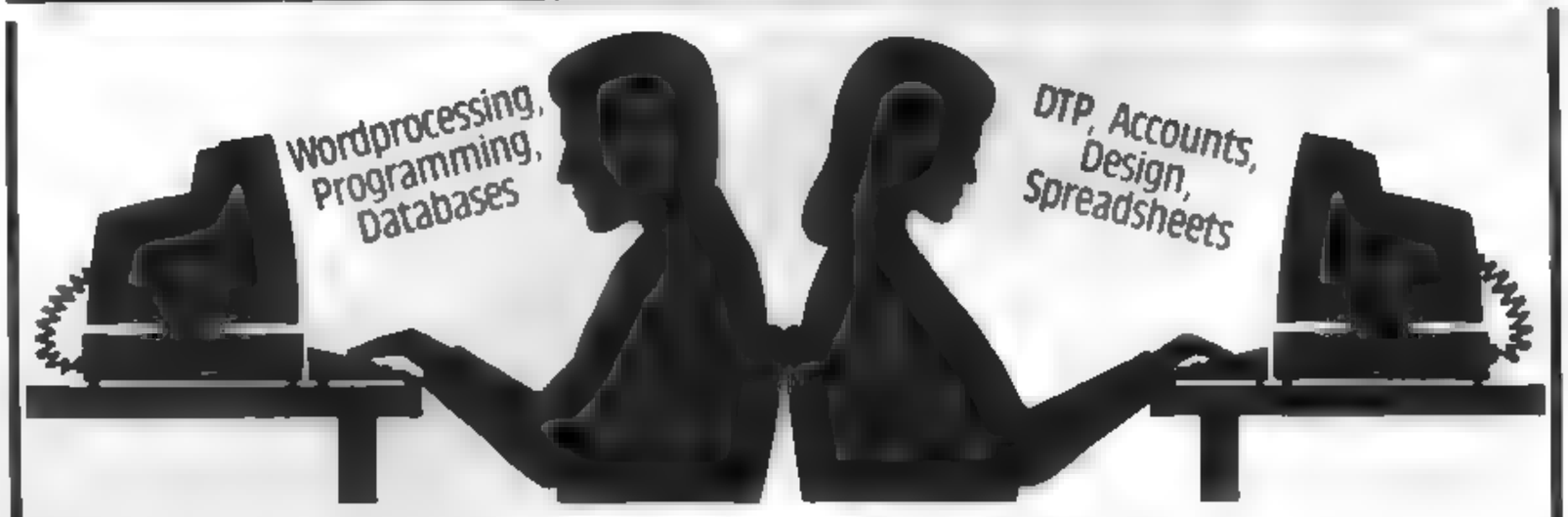

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TIPS

HELP!
ST posers

1. My most prized possession is my colour medium-res Atari SC1224 monitor. One day, I may decide to buy a PC or compatible and would like to know whether my monitor can easily be adapted to work with any of the PC graphic standards.

2. Also I have a couple of external 3.5" disk drives. With socket changing and some clever software writing, could it be possible to get them to work with PCs?

3. Can you tell me why ST-compatible hard disk drives are so expensive compared to the PC hard cards, surely a fancy case and light cannot double the price?

4. Are standard laser printers compatible with ST graphic type programs, or must the Atari laser be used?

• **1.** Yes.

2. Yes, no software necessary (they are exactly the same apart from the connectors).

3. PC hard drives use a different interface to the ST machine. They out-sell ST hard drives by thousands (probably hundreds of thousands) to one. It is therefore commercially viable to make and market more of the PC drives than the ST equivalent. Cheaper to make + cheaper to market = cheaper to buy.

4. Yes, standard lasers can be used.

Will the Atari ST or the Amiga 500 suit or will I need to step up to ST1040 range or indeed a different manufacturer?

A D Shefford, Farnborough, Hants

• Wish I had a pound for every letter like this that I receive! Both the machines you mention will suit your needs perfectly, A D. If you wish to be a little more adventurous, you could try an IBM PC compatible, and a thou will bring you a very nice little machine (Opus it: 20Mb EGA). Alternatively, I could sell you an old Oric Atmos which is surplus to my requirements...

HELP!
48K typewriter

I have a faithful rubber-keyed 48K Spectrum that I use for a few serious applications, also word processing via a Wafadrive and Centronics Epson RX80 FT printer driven by Tasword software.

Recently, I sought to use the RS232 port of the Wafadrive to drive a Smith Corona XD 6600 daisywheel typewriter (model 5 PEC) to improve the quality of certain text only letters. The XD6600 has a 9-pin D type socket which is I think for RS232-C input.

Whilst the XD6600 as a typewriter with its 'Spell-right' dictionary is fine, if noisy, I find the text handling facilities offered within *Tasword* better suited to my needs.

Could you or any of readers please say if this is feasible and possibly enlighten me on the idea.

Brian Birkett, Chester-le-Street, Co, Durham

If any readers know the XD6600 machine or just wanna get a gratuitous mention then please write to me (enclosing a fiver if the latter case applies).

HELP!
Apricot jam

I bought an Apricot PC with 360K drives from Dixons (*another end-of-line big 'D' victim – Tech Ed*), **completely unaware of the enormous cost of software for these computers. Being disabled and unable to work this has been a very limiting factor. Unfortunately, it was the last of two such machines and was supplied without the correct or full documentation. The machine is of course a discontinued model (!), but with it I have learned the rudiments of MSDOS, MSBASIC and Superwriter.**

This is a delightful instrument (*smiling in the face of adversity... Ed*) **with a first class green monitor, but I would ask, and be grateful for your help with the following:**

1. How can I configure, if possible, the system to read files from 3.5" IBM formatted disks which are used on my wife's Commodore PC1's external drive? Alternatively, can I persuade the Commodore to read the Apricot disks?

2. Can your readers advise me how to configure the Apricot to emulate the IBM as per the Apricot booklet. The instructions therein are insufficiently clear.

3. Is it possible, and if so how, to produce right justification with the early Superwriter for which I have no manual.

4. Finally, the version of MSBASIC doesn't agree with my GWBASIC manual. The latter has many commands, especially regarding graphics, which the software does not support. If anyone can assist me with these problems or has any Apricot software to flog, I would be grateful to hear from them.

Michael J. Stock, 8 Albert Road, Breaston, Nr. Derby DE7 3DL

• Afraid we've had no luck in trying to answer your queries; the best I can do is ask anyone who can help to write to you.

HELP!
Brother bother

I bought a Brother EP44 printer/typewriter which has a 24x18 thermal dot-matrix print head. I wish to use this with my Spectrum +2 and Tasword Plus Two word processing software. I have tried every way to print out the various type styles without success.

I would be very grateful if you could advise me how to do this from Tasword, and also how to do it from the computer in BASIC.

H W Dennis, Tunbridge Wells, Kent

• Sorry, Mr Dennis. Can't really help you on this one. Controlling machine-specific features like type styles and fonts is usually done either through hardware switches on the printer, or through software control codes. Unfortunately, the codes change from printer to printer.

If there's no reference to these features in your printer manual then you're really rather stuck. Unless an *Express* reader can come to the rescue...

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(Please don't send SAEs for replies, we can only answer enquiries in print).

So whether it's help offered or needed, write to:

Tech Tips, New Computer Express,
4 Queen Street,
Bath, Avon BA1 1EJ.

HELP!
Amiga peripherals

I have just upgraded to an Amiga 500 from a Spectrum +3, and I am interested in programming and hacking and have saved up £120 and I want to upgrade. But I have not been able to choose what to buy, I have been thinking about another disk drive or a 512k expansion or perhaps some good software.

You are the expert, what do you think should be the next step? Keep up the excellent work.

Martin Rubiera, Ilford, Essex.

• Well, any of the peripherals mentioned in the letter will help to improve your programming and your enjoyment of the Amiga. You can buy a second drive for £80 or so (try Evesham Micros, tel: 0386 765500), thereby leaving enough mazuma to purchase a good compiler or assembler.

If you want to buy a memory expansion then try Datel Electronics on 0782 744707. They will supply you with a half meg card for £19.99 or £34.99 with a clock. (RAM chips will cost you another £100 on top of this.).

Why not be really adventurous and buy a modem and comms software? £120 will bring you a Hayes compatible, auto-answer, auto-dial modem – if you shop around you may even get some comms software 'thrown in'. For a full explanation of jargon and a taste of what you can do with it, see issue 21 of *Express*.

HELP!
ST MultiFace

As you are the best and most well informed magazine around, like to ask you the following questions.

1. there a MultiFace for the ST?

2. it worth getting?

3. If so, where can I get it cheap?

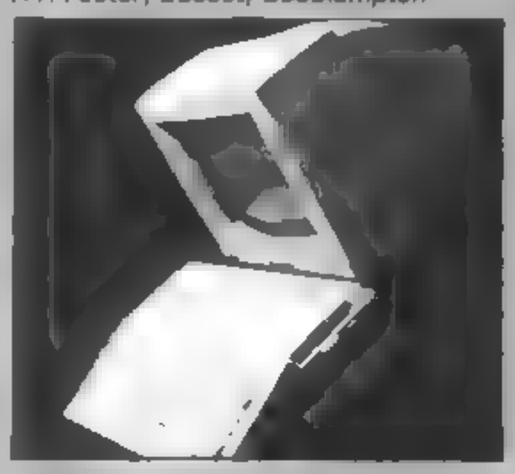
TIP Amiga foiled!

I have been a subscriber to your magazine now for a couple of months. I used to buy the OTHER one (!). Would you please consider this for your Tech Tips section.

Just bought a shiny new monitor for your Amiga? Looks good on your computer desk with your Amiga on the shelf below? If you find some programs have become erratic to load and some will not even try, then try this simple test. Lay a sheet of cooking foil over the rear half of the Amiga then try to load again. If this clears up your loading problems then just tape the tin foil out of sight directly under the monitor's shelf.

The loading problems in this case are caused by the numerous nasty emissions given off by the monitor which even affects things made out of silicon, plastic and metal.

A H Foster, Basset, Southampton



• Monitor radiation problems with your Amiga? Just reach for your Bacofoil...

HELP!
Which computer?

Could you please advise me on a computer system, i.e. computer, monitor/television and printer, price range: £1,000. My wife will be returning to work and needs it as a word processor and letters. I have two daughters age 7 years and 12 years. They will need it for education and games.

• Whilst I'm not au fait with the intricacies of the XD6600, connecting it to your Spectrum shouldn't be a problem. Determine which pins of the wafadrive RS232 and which pins of the XD6600 interface are GND, RX, TX (usually 5, 2 and 3 respectively). Connect the computer and printer GNDs together. Connect the computer TX to the printer RX and the computer RX to the printer TX. Then select ASCII output within *Tasword*, and you should get something!

4. Will it damage your computer (e.g. the disk drive)?
5. Why does the disk drive stay loading when the game has finished loading? Will this have any effect on the disk drive?
Wai Cheung, Worcester Park, Surrey
• **1.** Yes, there is a MultiFace available for the Atari machine.
2. Er, well, if you want to examine and make copies of your software, yes, but not otherwise – as a drinks coaster it's expensive and too small.
3. You can obtain the MultiFace for £49.95 from **Romantic Robot, 54 Deanscroft Avenue, London NW9 8EN.** Tel: 01 200 8870.
4. No.
5. The drive active light remains on for several seconds after the actual disk access has finished. This is perfectly normal, and will not harm your drive in any way.

HELP! Pricey printhead cable

Please could you advise me concerning a fault which has developed in my Panasonic KXP 1081 dot matrix printer. The printed cable connected to the print head has failed (after less than 15 months domestic use). This renders the unit beyond economic repair since Panasonic tell me that the flexible cable can only be replaced by purchasing an entire new printhead at £116 + VAT!

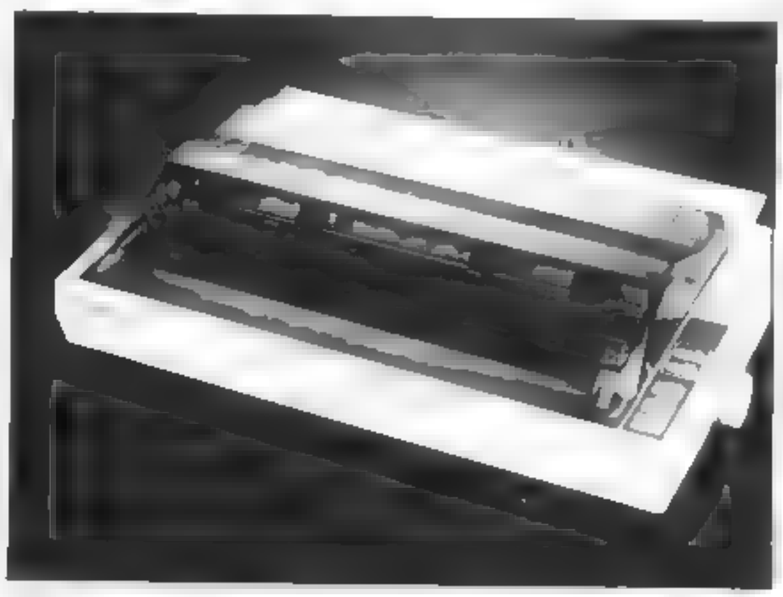
My question is can the printed cable be repaired anyway? Is the KXP 1081 unique in this respect? And if I am forced to replace it, can you recommend a printer where the cable can be replaced independently of the printhead?
Dr K E Coshe, Swindon, Wilts
• Well, it needs a more detailed description of the problem to say what the solution might be ('Doctor, I don't feel well', 'Right, take two of these and see me in the morning' – it doesn't work unless one has a description of the problem)

Without a full description (has the cable actually broken? Is the fault intermittent, Does the print head actually move? Can you describe how the cable is attached to the print head?) all I can say is bad luck, don't worry about other printers – even another KXP 1081, which is an excellent little machine – behaving in this way. At least you've just got yourself an interesting conversation piece to stand in the consulting room (assuming you are a doctor of medicine!)

HELP! Printer cables

Noisy graphics

I am writing to you in desperation! Please could you help me to find someone who sells serial printer cables, as I am having trouble connecting my Juki 6100 daisy wheel printer to my Atari 520STFM as everyone I have written to in Edinburgh and elsewhere has been unable to help me.


• Having trouble finding a cable for your printer? You could always make up your own...

I bought the printer second-hand and therefore was not supplied with any operating manuals or user guides, so please could you supply me with Juki's address so that I might obtain some.
Keith Spence, Edinburgh
• Have you thought about making a cable yourself? With a soldering iron and a little patience you can make up a cable very easily, and here's how to do it! Locate the serial port on your Juki 6100 (It will either be a 25-way D connector or a 9-way joystick type connector). The pins you need are GND, TX and RX – pins 7 (5 if it's the 9-way), 2 and 3 respectively. Rummage through the manual that came with your ST. At the back there is a diagram of the serial port showing the pin-outs. Make up a cable using two 25-way D connectors of the correct gender, joining both GND pins together, the computer TX to the Juki RX and the computer RX to the Juki TX. Using this configuration it should be possible to use the printer.

If you don't want to attempt the construction yourself, then you're going to have to find a radio or television repair shop which will be able to do it for you (for several pounds). Remember to take along the pin-outs of the computer.

As for Juki's address, we've had no luck at all finding one for you. All we can suggest is that you try a dealer selling these machines.

My dad and I have just obtained an Olivetti PR 1350 second hand printer. We got it working order, but we cannot find a way to connect it to my Amstrad 6128. We were wondering if you had any information about it. All we wanted to find out is how we could wire it up to the computer.
Alistair Penman, Ayrshire, Scotland
• You can contact Olivetti on 01-785 6666 or try making your own cable. See reply to previous letter.

TIP VTOL F-18!

Within the excellent Amiga *Interceptor*, the 'free flight' option offers more than the offered 4 flight take-off positions. When offered options 1-4, press 8, 9 or 10. The map display shifts, and the plane is approached along the ground. Under certain conditions, the plane will begin to fly sideways instead of forward – vertical take-off is also available: just experiment!
Jim Black, Co. Antrim

HELP! No more multiload?

I am the owner of an Amiga 500, shortly to be updated to 1Mb of memory. Is it possible to change the startup sequence of a multiload game so that it loads in the first initial load, rather than have that wait between levels?
• No. If you tamper with your commercial games software, then it is highly probable that you will render it unusable.

HELP! Noisy graphics

I'm the owner a Tandy 1000EX PC which has developed a high pitched whistle from the speaker. Every time I put coloured or games software, the whistle will start that penetrates my ears! The only way to clear it is to turn the volume off. Even when exiting to the DOS prompt the whistle follows, but will be OK if you re-boot until I load in graphics or any coloured software. It's especially bad when using a fill option in a paint program.
R S Gibbs, Tonbridge, Kent
• It would appear that the speaker in your machine is picking up radiation from the monitor screen, which is then manifested in an unpleasant hum or whistle.

Try positioning the monitor away from the machine, wrapping the area around the speaker in tin foil (as per tip from A H Foster). Failing that, you could disconnect the speaker!

HELP! Resolving problems

I have followed with interest your magazine but as yet I haven't been able to resolve the folowing problems.
1. I should like to know details of a program and accompaning book to teach myself and my 11-year old BASIC programming. Can you suggest a suitable commercial or preferably PD version for our Atari 520STFM.
2. I am confused with the various types of monitors/colour TVs and their resolutions. Could you please explain:
High resolution
High resolution mono
Medium resolution
Low resolution
Where can each be found, i.e. monitor or TV?
G H Heckow, Boscombe, Dorset
• Give HiSoft a ring on 0525 718181. It has several reasonably priced, fully-featured BASIC compilers, which come with very good manuals.

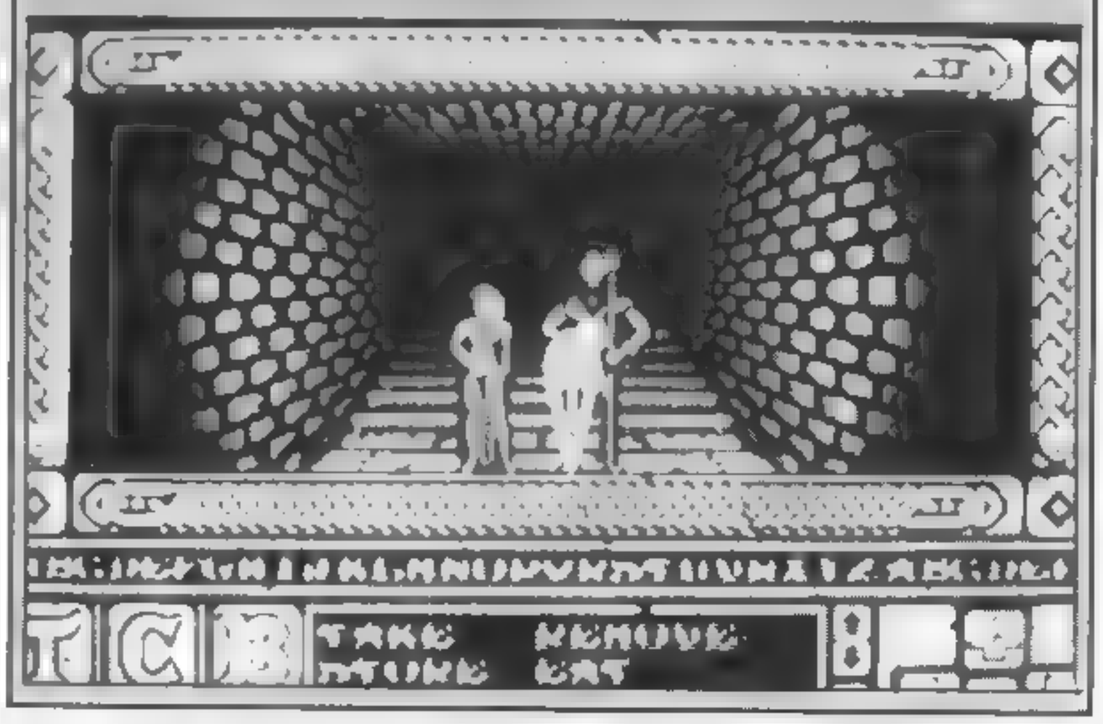
High resolution is only available with a mono monitor. It offers a screen resolution of 640x400 pixels. Medium and low resolution, are available with both colour monitors and televisions. They offer a screen resolution of 640x200 with 4 colours and 320x200 with 16 colours respectively.

TIP 1Mb Galdregon

I have a tip for all people playing Galdregon's Domain with a 1 meg Amiga 500, as it will not load, and taking out your extra memory is a pain. I have found a way of loading without taking out your memory which is free.

First, load the workbench and run NoFastMem. Then remove your WB disk and insert GD disk 1 into your internal drive and do a quick reset you will now be able to load Galdregon's Domain.

To make things easier, I have made my SAVE GAME disk bootable with NoFastMem as the only thing in my startup sequence so I use that to get rid of my extra memory first, then load the game as above and SAVE GAME as usual.
S P Jones, Shrewsbury, Shropshire



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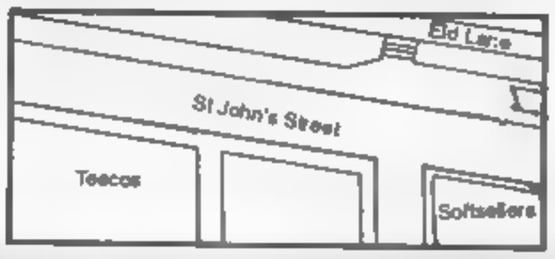

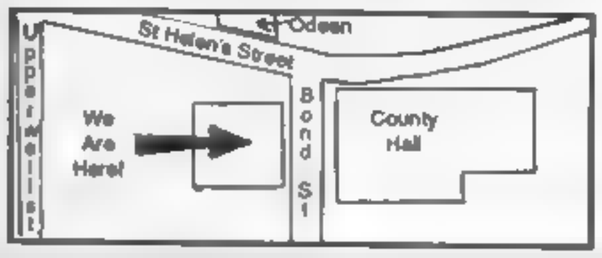

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● **No sign of excess this week – apart from *Rockstar Ate My Hamster* – as the *Express* offices witnessed an surge in software standards.**

***Populous* got the raviest review – perhaps this is due to Andy Storer's God-complex? After all, faced with the choice of playing god, or playing a Code Masters game, what would YOU rather do?**

CYBERNOID II

HEWSON

ST • £19.99dk
Also on Spectrum, C64, CPC, Amiga

After kicking pirate-butt in the first episode, *Cybernoid II* throws you up against a new pirate Battlestar in this exploration game with just a hint of shoot-'em-up action.

● **GAMEPLAY**

Flying your spacecraft around the maze of screens known as the Federation storage depot, you have to negotiate pirate ships, traps and emplacements.

You can even things up by collecting various pieces of extra weaponry such as seeker, smart and tracer missiles. But beware, these are supplied in limited number, so you'll have to keep a check on your itchy trigger finger if you want to survive till the nth screen number.

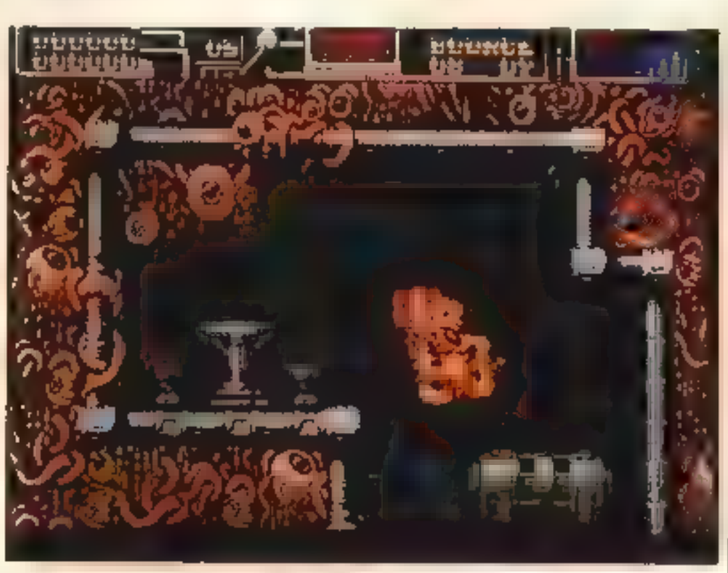
● **GRAPHICS AND SOUND**

Cybernoid II's backdrops are stunning, with beautifully drawn and coloured objects, creatures and animated elements. Less impressive are the uninspiring sprites (especially your own spacecraft), which are far too small. The only time the sprites look good is when they're blasted into multi-coloured explosions.

The accompanying soundtrack is a purely functional, average affair.

● **OTHER VERSIONS**

Out since late '88, Spectrum, C64 and CPC versions all perform well – with great audio-visuals and the same level of playability as ST *Cybernoid II*. The soundtrack on the Amiga version is being produced by a different musician, but this will probably be the only noticeable difference.



• Not seeing eye-to-eye with the pirate invaders

● **EXPRESS VERDICT**

Cybernoid II should appeal to fans of its predecessor, but it's unlikely to attract a great deal of attention in the software sales charts.

✪ ✪ ✪

Rik Haynes

POPULOUS

ELECTRONIC ARTS

Amiga £24.95dk
Out soon on ST and PC

From the same team that brought you the glitzy graphics of *Fusion* comes this 1,000-world strategic tour de force that could be most accurately described as an Advanced God Simulator.

● **GAMEPLAY**

After choosing to adopt the role of God or The Devil, you set about creating the conditions necessary for survival in a range of environments – Worlds of Grass, Ice, Fire and Desert. By manipulating a relief grid of landscapes through a system of icons you're able to flatten land and allow your followers to build settlements so that they can breed and prosper.

You appoint a papal magnate to explore new territories and can instruct his followers to engage in fights with your opponents' acolytes whenever they meet. And to stop your opponent developing a parallel civilisation elsewhere you can engage in a spot of divine intervention, causing earthquakes, disease and floods after stealing buildings from him.

You may change the level of aggression, modify the default rate of development, customise your own worlds – all in all, there are 60 parameters you can alter.

After either surrendering or annihilating your enemy, you progress onto the next map. Like *Sentinel*, there's no need to work your way through all 1,000 worlds, since you can skip from one to another. And not all divine combat need be against the computer – there's a neat option to play against a friend via modem link.

● **GRAPHICS AND SOUND**

Populous's screens are organised as solid 3D isometric grids representing portions of scrollable environments inhabited by small, animated humans. A border area of icons allows you to perform various functions such as zooming onto any area of the map, invoking a disaster and ordering your population to fight, settle or group together.

The combination of detail, effortless landscape modification and humorous animation contributes to a great sense of atmosphere, as do the brilliant sound effects. Besides the deep background chanting, various spot effects to accompany earthquakes and floods compound tension, and many occur without a visual cue – prompting you to flash through the world to find the source of the action.

● **OTHER VERSIONS**

Neither the ST version or the proposed PC release are available yet, but it's unlikely they'll feature as strongly as on the Amiga.

● **EXPRESS VERDICT**

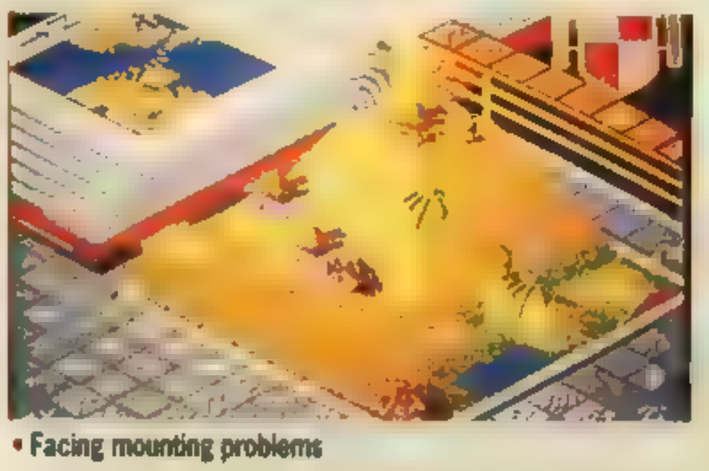
A fiendishly compelling outing that represents an innovative approach to gameplay and skillful use of isometric graphics. *Populous* has all the ingredients to ensure lasting interest and the added bonus of the modem link means that once you tire of playing God you can take on mere mortals instead.

5 GAME

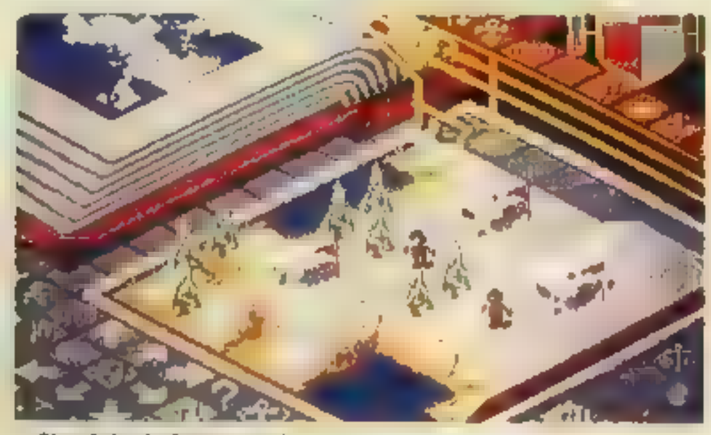
✪ ✪ ✪ ✪ ✪

Andy Storer

• It's a small world. Mind you, there are 1,000 of them...



• Facing mounting problems



• S'no joke being mortal

KINGS OF THE BEACH

ELECTRONIC ARTS

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No other versions planned

Are YOU a radical young PC owner? Are YOU fed up with the same old PC strategy/ roleplaying/ wargaming/ adventure/ wordprocessor/ spreadsheet/ database/ comms title? Are YOU still reading this rubbish? Then *Kings of the Beach* could be the game for YOU...

● **GAMEPLAY**

How about a game of volleyball, and getting down to a world tournament of professional beach volleyball on yer trusty old PC? Along the way you be able to visit all the best beaches around the world, from Hawaii to Rio (Southend excluded) and even use the famous spike, bump and set volleyball manoeuvres.

● **GRAPHICS AND SOUND**

EGA backdrops and sprites are really neat, far out, well rad, well crucial, well bad, well wicked, well 'ard, awesome, mega, brill, fabby, total, melt city, etc. Seriously, folks, not only are the visuals insidious, inviting and interesting – they're pretty good too.

Audio won't get you on the dancefloor, but may get you reaching for the volume control.

● **OTHER VERSIONS**

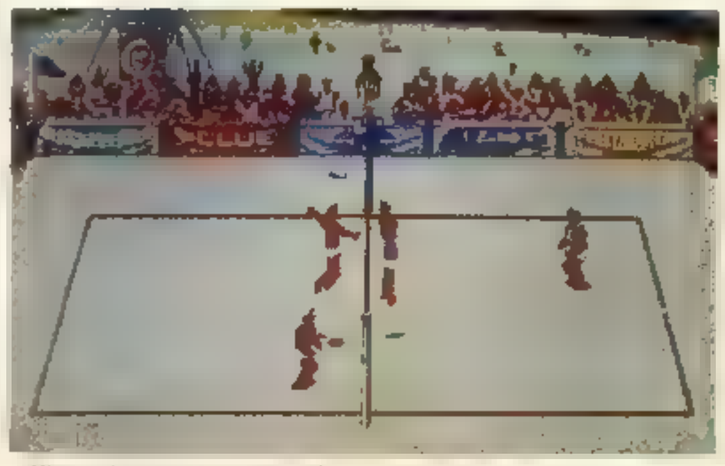
In a shock announcement this week, an EA spokesperson told *Express*, "no other versions of *Kings of the Beach* are planned in the short term".

● **EXPRESS VERDICT**

Kings of the Beach is a playable and enjoyable departure from the average sports sim and gives the stuffy, unhip PC a stab at street credibility.

✪ ✪ ✪ ✪

Rik Haynes



• Hip to the street, er...beach

RINGSIDE

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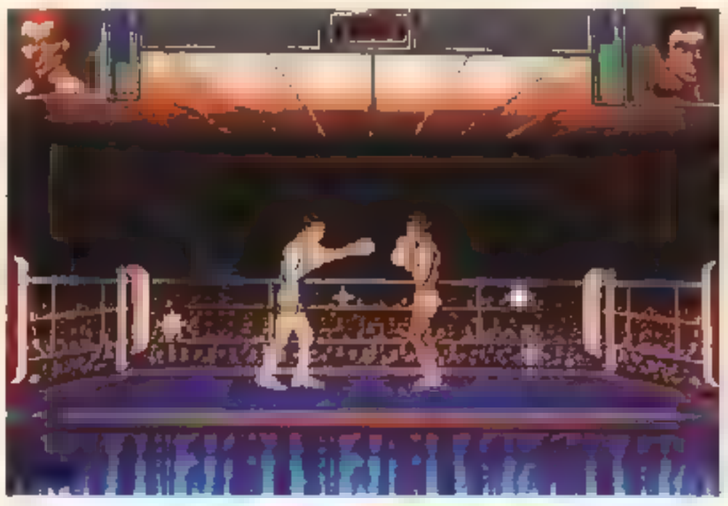
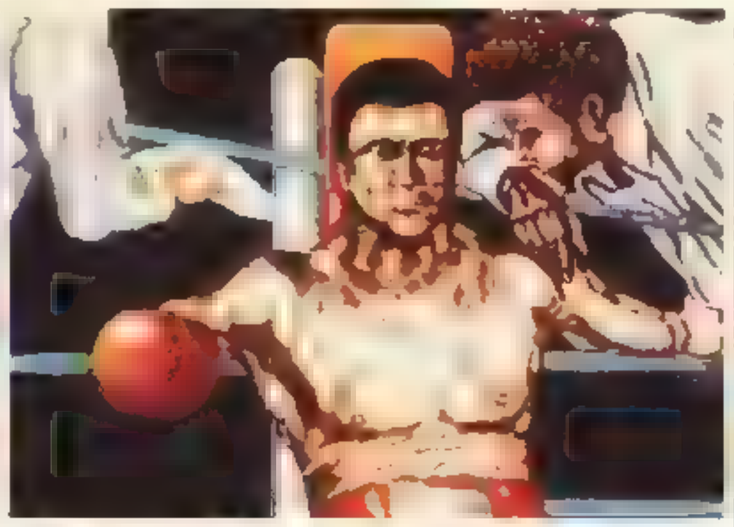
Amiga • £24.99dk
Due out on ST, C64

Although not as popular as the martial arts kick-'em-up outings that seem to come out each and every week, boxing sims are pretty thick on the ground too. *Ringside*'s possibly the most sophisticated to date, but is it a knockout?



• A well-placed jab misses your opponent by a mere six feet

● **GAMEPLAY**
After choosing the name, weight and age of your contestant, you select his weak and strong points – uppercut and defensive left and right hand actions, say.



• Flap that towel! It's the only way to cool down between rounds

You have a maximum number of points you can assign to each type of punch, which increase with each win in the ring. You start at the bottom of a tournament ladder and, after selecting a difficulty level and the number and length of rounds, commence fisticuffs with your opponent. If you're a little nervous, though, you can always engage in a spot of sparring beforehand.

So far so good, but when you actually come to control your man in the ring there's nothing particularly innovative about the game. Action is from a side-on viewpoint only and requires the usual combination of joystick movements to score a direct hit. All that remains is to watch the energy level as either you or your opponent begins to get a hammering. Between rounds you can waggle the stick to recuperate your boxer before his next battering. And then it's on and on to the top. Or maybe not.

● **GRAPHICS AND SOUND**
Although more than competent in the graphics department – the status screens and between-round sequences especially worthy of note – the actual boxing is a let-down. Animation is okay, as are the slo-mo replays of knockdowns, it's just that it'd be nice to see an over-the-shoulder shot of the action from time to time.

Sound makes a vain attempt to convey crowd noise – with a continual digitised loop that drives you crazy – and also includes the biffs and thuds of head meeting glove .

● **OTHER VERSIONS**
Only the as yet unseen ST version is in the pipeline. Don't expect too much difference.

● **EXPRESS VERDICT**
A promising package let down by a lack of imagination. Clichéd conclusions might start with: "In the final count it's no knockout... it doesn't pack a punch..." etc. Either way, you'd end up hammering your monitor. For confirmed pixel punchers only.

✪ ✪

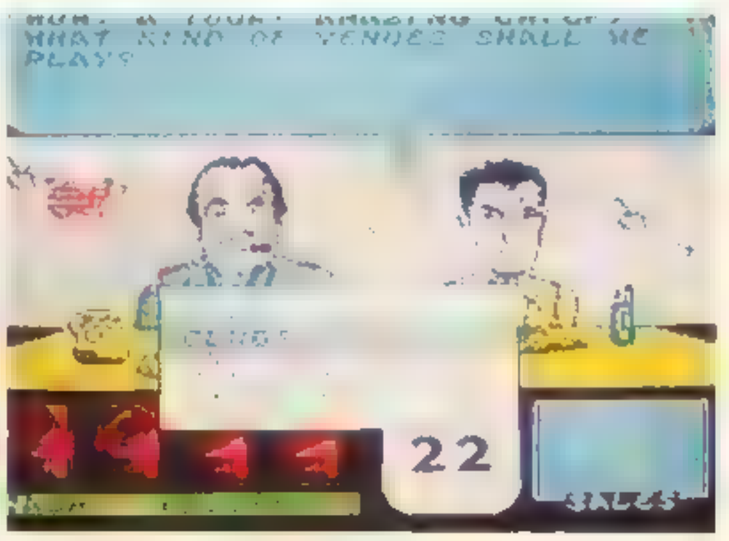
Andy Storer

ROCK STAR ATE MY HAMSTER

CODE MASTERS

Spectrum • £9.99cs
Due out on C64, CPC, ST, Amiga, PC

"Code Masters reluctantly present..." reads the opening screen of the Simulators' latest release, and for once it's a departure from the staple diet of sporting activities.



• What kind of venue indeed. The next door neighbour's lock-up perhaps...

● **GAMEPLAY**
You're the manager of a band composed of various rock idols you choose from a selection of cartoon characters with more than a passing resemblance to famous faces. You name the band and then set about putting them onto the road of fame and fortune by arranging them gigs in either pubs, clubs, universities, concert halls or stadiums. From time to time you back up performances with practice days and publicity, in order to make as much dough as possible as you work your way through a calendar, keeping an eye on wage bills and other overheads such as Porches.

And yes, the sole aim is to make as much money as possible whilst fending off taxmen, sponsors, pirates and – presumably – public taste.

● **GRAPHICS AND SOUND**
Curiously absent of any sound whatsoever, *Rock Star* visuals are left to fend for themselves in a repetitive loop of half a dozen static screens only interrupted by cartoon conversation bubbles. Although these change smoothly enough, the effect is dull to say the least.

● **OTHER VERSIONS**
No details are available as yet.

● **EXPRESS VERDICT**
Unless we're all budding Malcolm McLaren's here, we'd say *Rock Star* is too easy. A band composed of Morrissey, Lemmy and Salt 'n' Peppa managed to make us two million quid in four months. Just as well there's no soundtrack of the results. Maybe Code Masters should look into that possibility for the 16 bit versions – then we could have an even bigger laugh.

✪ ✪

Andy Storer

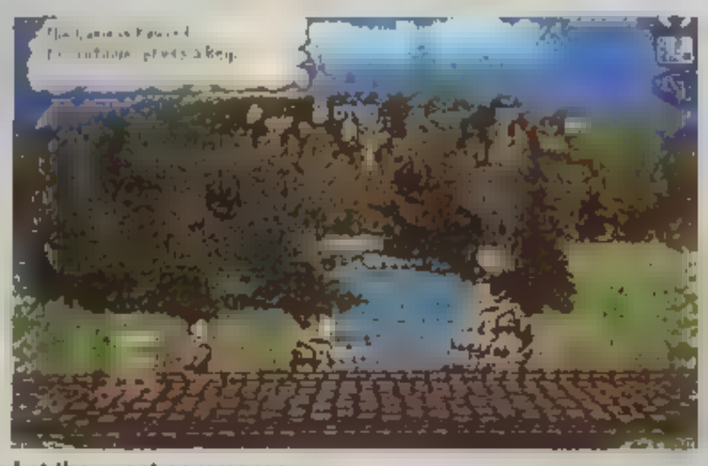
WAR IN MIDDLE EARTH

MELBOURNE HOUSE

Amiga £19.99dk
Also on Spectrum, C64, CPC, ST, PC, Apple IIGS

Already out on 8-bit formats, *War in Middle Earth* is the first Tolkien-licensed game to reach the Amiga – so has it been worth the wait?

● **VERSION UPDATE**
You'll have to stop the evil Sauron and his forces taking over Middle Earth in this epic adventure/strategy game. Controlling the Hobbit Frodo Baggins and his friends and allies, you must journey to the land of Mordor so that you may cast "The One Ring" into the Cracks of Doom, thus destroying nasty Sauron's powerbase.



• Let the quest commence

War in Middle Earth is split into three levels: full, campaign and encounter. This translates into two maps (full size or zoomed-in campaign size), and the encounter pseudo-3D sideways look of the action. Combat occurs every time you meet the enemy, with you able to issue commands to your players – like charge, engage, withdraw and retreat – in an effort to outwit or destroy your opponents.

● **GRAPHICS AND SOUND**
The full-size map of *Middle Earth* is nicely designed, but the campaign map is sparse and a little disappointing. By far the best visual aspect is the great encounter display, with its variety of backdrops, sprites and spirits.

The militaresque, heavily snare-drum influenced soundtrack on the title screen seems out of place, and the sound spot-effect for clicking an icon on the campaign map sounds like a door bell. "Not great" would be quite an understatement.

● **OTHER VERSIONS**
The 8-bit versions are in a similar vein to the Amiga's, but replace the character interaction in the encounter level for a battle sequence and therefore have a stronger wargaming flavour to them. VGA PC *War in Middle Earth* looks identical to its Amiga and ST counterparts. Unfortunately, we haven't seen it working in the other graphics modes yet.

● **EXPRESS VERDICT**
With its attractive visuals in the encounter level and greater player interaction, Amiga *War In Middle Earth* has the edge over the 8-bit versions.

However, it still fails to live up to the great writings of Tolkien. Perhaps a cross between *Balance of Power/UMS* strategy/wargaming style, *Dungeon Master/Ultima* roleplaying style and *BattleChess/Last Ninja* audio-visual quality would be the answer?

We can only hope...

✪ ✪ ✪ ✪

Rik Haynes

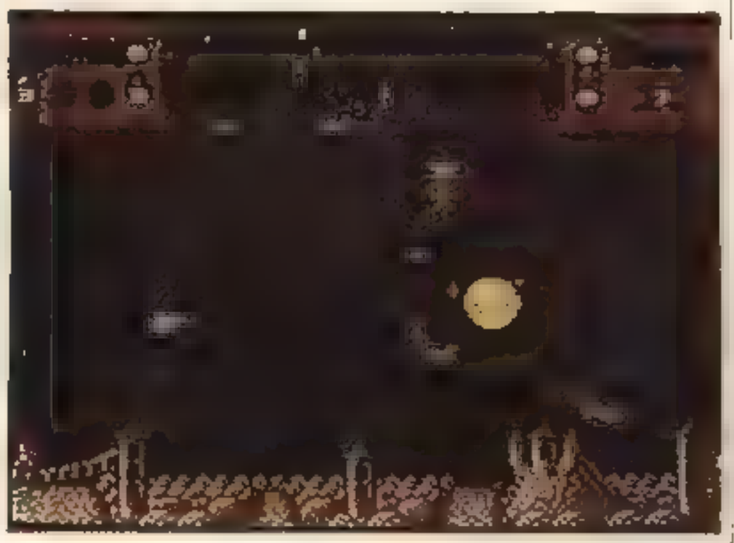
• The full map (Autoroute won't do you much good here)

A scrolling adventure-'em-up

Rik Haynes risks the adventure of a lunchtime by previewing the latest from Magnetic Scrolls

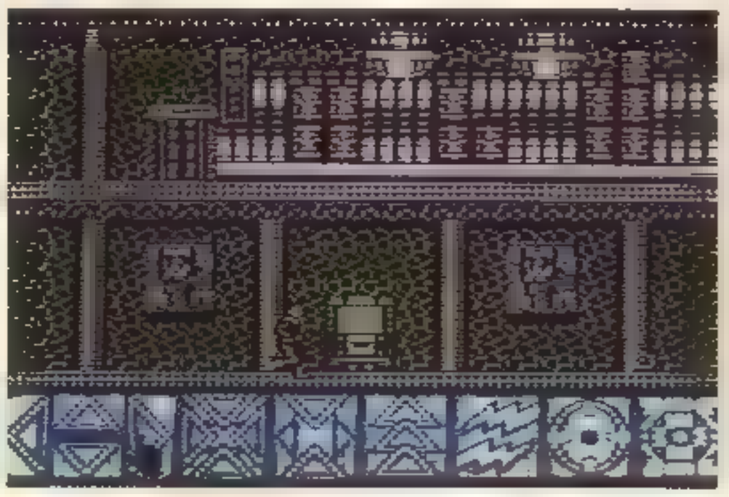
MYTH MAGNETIC SCROLLS

Myth is the first mini-adventure from Magnetic Scrolls, the team responsible for the popular *Pawn*, *Guild of Thieves* and *Fish!* adventures. It features Scrolls' celebrated parser and location graphics, and places you in the role of Poseidon, God of the Sea. After being de-godified by Zeus, you must win your divine powers back by stealing Hades' Helmet from his subterranean Palace. *Myth* is out later this month on ST, Amiga and Mac, with Spectrum, C64, PC and PCW versions to follow in May. However, it's only available to members of *Official Secrets*. Further details on 0279 726541.



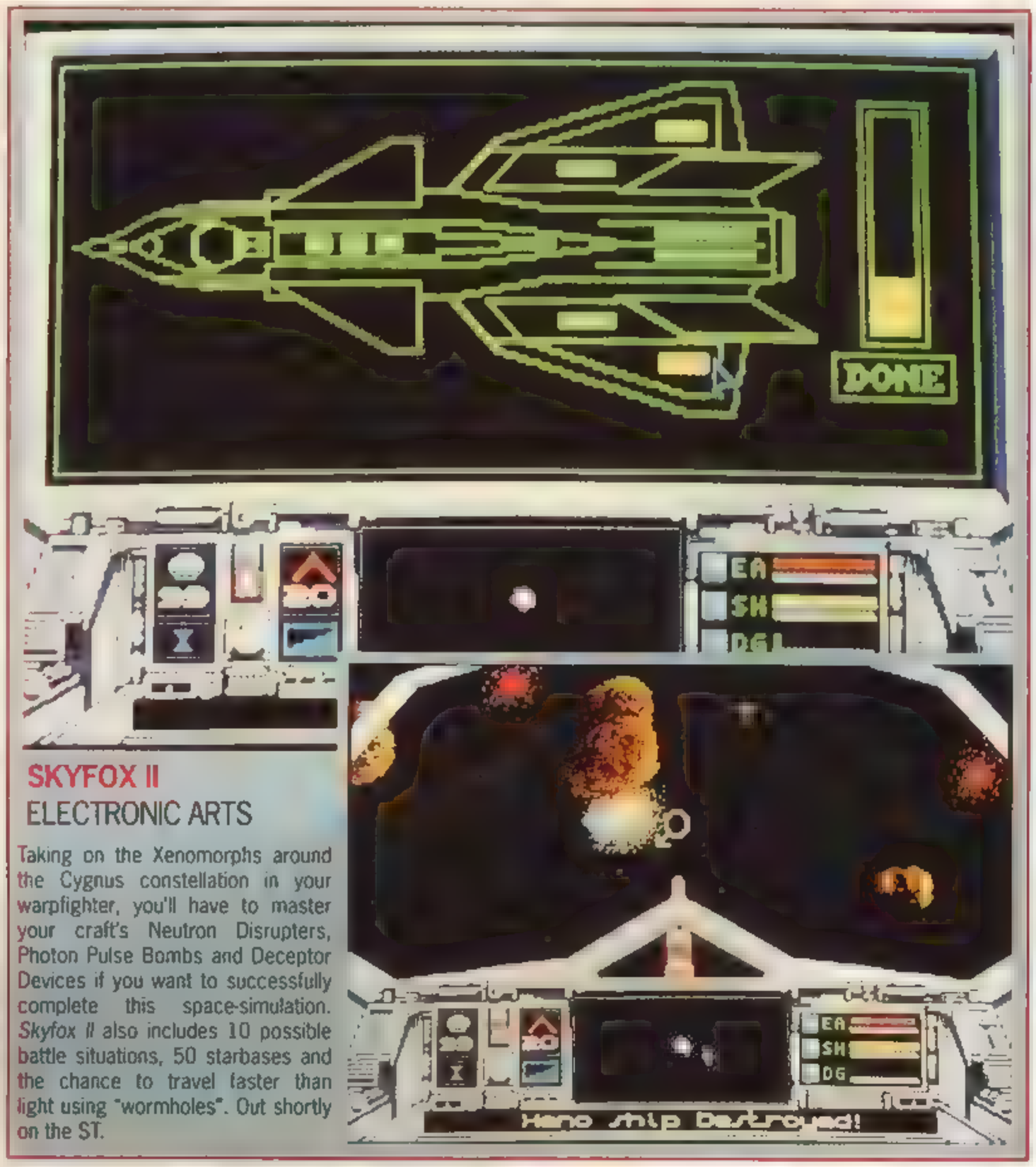
INSECTS IN SPACE RACK-IT/HEWSON

From the crew that brought us the classic *Wizball*, comes *Insects in Space* by Sensible Software. You're in control of Saint Helen Bak, assigned to stop killer bees picking up defenceless human offspring and dropping them from up on high, using your laser powered eyes and the "Space Time Continuum Dust Circle". Due for release next month on C64.



OBLITERATOR MELBOURNE HOUSE

Originally from Psygnosis on the ST and Amiga, *Obliterator* allows you to become a genetically enhanced humanoid. Your mission (should you accept it, Jim), is to save Federated Space and Mother Earth from the onslaught of a massive alien spacecraft. Coming soon on C64.



SKYFOX II ELECTRONIC ARTS

Taking on the Xenomorphs around the Cygnus constellation in your warpfighter, you'll have to master your craft's Neutron Disrupters, Photon Pulse Bombs and Deceptor Devices if you want to successfully complete this space-simulation. *Skyfox II* also includes 10 possible battle situations, 50 starbases and the chance to travel faster than light using "wormholes". Out shortly on the ST.

EUROPEAN SPACE SHUTTLE COKTEL VISION

At the helm of the European space shuttle "Hermes", you have a choice of two missions – satellite park attendant or setting-up house in space. Due for take-off later this month on ST, Amiga and PC.

ZERO GRAVITY EAS

Zero Gravity is a cross between tennis and pinball, and allows one or two players to partake in a bit of zero-grav space-enviro entertainment. Out shortly on C64.

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Computer chaos

More computer cock-ups from Mel Croucher's archives

Stockholm, Sweden, January 1989

A well-dressed gentleman walks into a Stockholm computer store wishing to buy a home micro using credit. He offers an ordinary Swedish postage stamp as proof of his identity, but the store's own computer refuses to accept his cheque. The machine cannot reckon his identity as being real, and in the absence of any credit rating on any Swedish database, dismisses him. The non-existent customer is Karl Gustav, King of Sweden.
Ned Sherrin

Santa Clara county jail

The world's first computerised jail-break attempt is thwarted by a Deputy comparing on-line entry with manual records. An enterprising (and computer-literate) inmate has gained access to his data file and switched his own release date from December 31st to December 5th. 'I didn't mean any harm, I just wanted to get home for Christmas' he tells the Governor.
San Jose Mercury News, 14.11.84

Tampa, Florida, USA

A severe jolt is delivered to a retired couple, and their discharge is more than electrical when they receive their electricity bill from the Tampa Electric Co. of $5,062,599.57. The company apologises to Jim and Winnie Schoelkopf, blaming the error on a computer operator. The correct bill should have been for $146.76. To make amends, the computer offers them easy terms to ease their troubled minds: 'budget' monthly instalments of $62,582.27.
Toronto Star, 29.7.88

Dusseldorf, West Germany

A 54-year-old female cook is tried for brutal murder. After a medical insurance company insists that she take some routine tests, a computer error gives results that state she has incurable syphilis and has passed the disease on to her 15-year-old daughter and 13-year-old son. She is so shocked by the printout that she strangles her daughter and unsuccessfully tries to kill both her son and herself. The court acquits her; the insurance company changes its software.
UPI, 19.3.83

The Old Bailey, London

Paul Dye is fined £202,000 and sentenced to a lengthy stay in prison for masterminding a £200 million heroin smuggling operation. A highly organised professional, he cannot afford to get copped with a diary, contact list or record of his deals, so he has been running his operation on a Psion Organiser which he can wipe clean if the law catches up with him. When the Psion Organiser is called to the witness box, his 'erased' files are summoned up from the limbo of the computer's EPROM chips, providing the Court with one of the most detailed records ever in a British drugs bust. Mr Dye now has twenty-eight years in chokey to try and work out whether he has a case against Psion under the Trades Description Act.
The Guardian, 7.3.88

Quai d'Orsay, Paris

With the Salman Rushdie 'Satanic Verses' affair still wrecking Iranian links with Europe, M Jean-Bernard Raimond, the French Foreign Minister, is very wary of his undiplomatic software. He has formally apologised for a computer gaffe which sent a word-processed invitation to the Iranian Chargé d'Affairs for a drinks party at the Elysée Palace. Not only is alcohol anathema to the gentleman concerned, but France has broken all ties with Iran. It is just was well that the invitation was not spell-checked by *LocoScript*, which transforms 'Chargé d'Affairs' to 'Charged deafaids'.
Anne-Elisabeth Moutet, Sunday Telegraph

Amsterdam, the Netherlands

The following information has been expurgated due to the unlikely possibility of certain readers committing illegal actions.
The entire range of computer-controlled ***** fruit machines made between February and August 1988 has a small design fault. The bug involves a failsafe battery-powered memory chip, to protect gamblers in the event of a power failure. To rig these machines, all the punter has to do is keep playing until the machine is ready to pay out a substantial sum, and pull the power plug before the winnings come spitting from the chute. When the power is restored, the machine is convinced that all wins, no matter how small, are the same value as its memorised pay-out. Skillful players can empty them within half an hour.
P Knoppers

Mission Control, Houston, Texas

The Gemini V space mission returns to Earth, and splashes down 100 miles off course due to an unchallenged piece of programming. To calculate the landing site, days, hours, minutes and seconds elapsed since launch are logged, using the sun as a fixed reference point, and knowing that the Earth spins on its own axis at a constant speed. Unfortunately, the programmer forget that the Earth also orbits the sun.
Joseph M Fox, Englewood Cliffs, New Jersey

NEXT WEEK

Budget Systems
Buying a computer? Check out the Express guide to building a basic system – without breaking the bank

Radical alternatives
A report on the Alternative Micro Show

Consoles
Ultimate games machines. But how do the games stack up?

History of the CPC
Five years old - and stronger all the time

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Shoot from the Lip... *the week's most quotable sayings*

"It's accepted that breaking into a bank or shoplifting is a crime but I don't think people see copying software in those terms. We need to make people aware and the best place to start is with the kids."
Palace's Pete Stone on knocking out the playground pirates.

"The virus threat had evaporated leaving no more lasting impression than the embarrassed faces of those who had pessimistically foretold the day of doom."
Lindsay Nicolle in the Independent on the Friday 13th fiasco that never was.

"We expect to cause the same stir in the computer world as Aha caused in the Pop world."
GFA's Rolf Hilshner who perhaps thinks his BASIC Interpreters for the Amiga will prompt mass hysteria amongst mid-teen girls.

Where do you buy a copy of Word Perfect 5 for £211* at 3.45 on Saturday afternoon?

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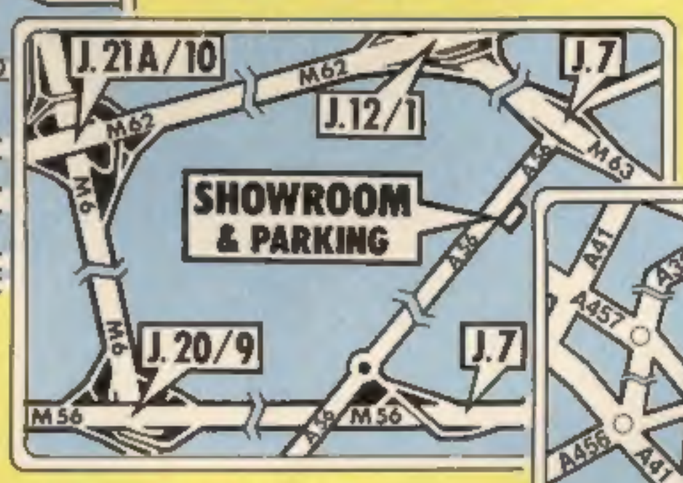

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